

INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week

Witty Colonel

Evansville Papers, Please Copy

Quotes of the Week

Verse of the Week

New Use for Freezers

Baseball Notes

From Our Mailbag

Postscript

Selling Capsules

Skilled Rebuttal

Story of the Week

1542 Old Farm Lane
York, Penna.

Editor:

I am attaching the draft of a story which I think qualifies as one of your "Stories of the Week." It's a true story, but for good reasons, we don't want the gentleman in question tied in with any firm or location.

The chap whose experience I have related has read and approved the story for your use.

W. C. MOORE

A manufacturer's representative attending the recent Restaurant Show in Chicago returned to his room in the Sherman hotel in the wee hours and fell into a bottomless sleep. Sometime later he was awakened by a terrific noise, and after painfully marshalling his sleep-drugged wits, he determined that the noise was caused by an inebriated couple trying to open the door of an adjoining room.

First the man would try the key, then haul off and kick the door with all the force he could muster. Then the woman would grab the door knob and shake it with all her might. This procedure continued until our rudely awakened sleeper could stand it no longer, whereupon he struggled from his couch, flung open his door, grabbed the key from the struggling inebriate, and with a bellicose "Why in hell don't you put the key in the keyhole," he opened the door, gave the incapable gentleman a push, and said, "Now, good night!"

The female half of the couple stood weaving and trying to focus her eyes as she remarked, "He sure is angry, isn't he?" To which the male companion responded, "He sure is!"

"And do you know," said the manufacturer's representative, "I don't believe that either of them noticed that I didn't have a stitch of clothes on."

Witty Colonel

Col. William Rockwell, who chairs the board of 10 great American corporations (including Rockwell Manufacturing, Timken-Detroit Axle, Timken Silent Automatic, Standard Springs, Ohmer Corp. and Red Star Products) is an "old shoe" type of man with a rapier wit.

Dick Frost of the Detroit Board of Commerce visited Paris recently with a party of businessmen. "We were in the offices of the ECA," Frost relates, "and an ECA official was giving us a dew and sunshine talk. As he concluded, Col. Rockwell gazed out of one of the windows and asked:

"Is this the window you throw the money out of?"

Evansville Papers, Please Copy

Later, in London, the colonel made a speech in which he cracked:

"In England, a man isn't a success until he's knighted. In the United States, he isn't a success until he's indicted."

Quotes of the Week

"All the strength and force of man comes from his faith in things unseen. He who believes is strong; he who doubts is weak. Strong convictions precede great actions."—JAMES FREEMAN CLARKE.

"Concentrate on contributing to the world; then collecting from the world will take care of itself."—B. C. FORBES.

(Concluded on Page 12, Column 1)

ISSUED EVERY MONDAY AT 450 W. FORT ST., DETROIT 26, MICHIGAN. ESTABLISHED 1924

AIR CONDITIONING & REFRIGERATION
THE NEWSPAPER OF THE INDUSTRY

News

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Frigidaire's \$12 Million Plan House Bill To Tops as Many Firms Expand Include Freezer Excise of 7%

New Deepfreeze Plant To Produce Refrigerators

LAKE BLUFF, Ill.—A \$4,000,000 plant to produce its own refrigerators is being erected here by Deepfreeze Div. of Motor Products Corp.

To be completed by Dec. 1, the factory is on a 57-acre site near the North Chicago plant. Officials of the company turned the first sod last week.

Although Deepfreeze has been marketing refrigerators since December, these have been made by another source. Between 500 and 600 employees will be hired for the new plant.

La Crosse Cooler Adds 50,000 Ft. for Production

LA CROSSE, Wis.—The third expansion project since completion of its new factory in 1946 will add 50,000 sq. ft. to the production facilities of La Crosse Cooler Co. here, the company has announced.

Adjoining the main plant and offices, the new structure will permit expansion of the assembly, finishing, refrigeration, and crating departments, and ease the burden on existing manufacturing facilities, the company explains.

Creation of a second assembly line will permit practically all of the company's diversified line to be produced on a quantity production basis and separate the assembly of beverage cooling and milk-cooling equipment.

After the new structure has been completed, which is scheduled for mid-summer, office facilities will be enlarged and showroom provided, the company announced.

This expansion program is the eighth in the company's 17-year history. Since 1946 when the new plant was completed, 39,000 sq. ft. of warehouse facilities have been added. An 18,000-sq. ft. addition went up in 1948; 21,000 sq. ft. more in 1949.

Carrier's Combination Heating, Cooling Unit Needs Only 1 Thermostat

SYRACUSE, N. Y.—Introduction of a compact packaged summer cooling and winter heating air conditioning unit, controlled by the same thermostat in each season, has been announced by Carrier Corp.

The unit is claimed to require "the minimum of space"—being only 52 in. wide by 43 in. deep and 70 in. high over-all. It can be used in new structures or adapted for replacement on existing duct systems.

The combination system furnishes automatic gas heating in winter and summer cooling by hermetically sealed refrigeration equipment. Known technically as the Carrier 38B Weathermaker, it is being produced in limited quantities this year in three capacities—3-hp. cooling and 110,000-150,000 B.t.u. heating, 5-hp. cooling and 110,000-150,000 B.t.u. heating and, 5-hp. cooling and 165,000-200,000 B.t.u. heating.

The cooling and heating elements in the 38B are the same, and operate in the same way, as those used for many years in Carrier's self-contained Weathermaker and unit heater lines.

This development is enclosed in a single cabinet, which is thermally and sound insulated. It replaces the so-called companion heating unit, in-

(Concluded on Page 4, Column 5)

WASHINGTON, D. C.—The House Ways and Means Committee has voted tentative final approval to a tax bill which includes some excise tax cuts on appliances and it is expected that the bill will be voted on by the House some time this week.

The bill, if approved by the House, would then be sent to the Senate. The Senate could make any changes it wants. If it did so, a conference between members of both houses would be needed to iron out the differences. Then the final bill would be sent to President Truman for approval or veto.

Informed sources say that if the bill goes through both houses in its present form, President Truman will sign it and thus make it law before the adjournment of Congress, which is expected by the end of July.

If approved, the new tax law would probably not become effective

(Concluded on Page 4, Column 2)

Newspapers Hit by NAED for Rates on Local Co-op Ads

By John O. Sweet

ATLANTIC CITY, N. J.—A resolution urging all appliance distributors and retailers "to take immediate steps to build the additional specialty sales forces necessary to insure the complete market development of major appliances and electric housewares as well as television" has been adopted by the Appliance Div. of the National Association of Electrical Distributors.

The resolution was one of five approved during the NAED's 42nd annual convention held June 12-16 in Convention Hall here. In other resolutions, the Appliance Div.:

1. Condemned "as uneconomic and discriminatory the practice of local newspapers in charging local electrical appliance distributors and dealers national rates for purely local co-operative newspaper advertisements . . . while at the very same time granting lower local rates to competing regional and national retail chain organizations."

2. Urged that the cost of cooperative advertising "be computed by a manufacturer as a part of the cost of goods; and that a reasonable arrangement be made by a manufacturer to provide for 'carry-overs' and 'bill-backs' at the end of a calendar or fiscal year."

3. Recommended to all electrical distributors "serious consideration of the advantage to them . . . of employing accounting methods which conform with the suggested Accounting System for Electrical Specialty Appliance Distributors, as approved and recommended by the 37th annual convention of this association . . . and as further amended at this 42nd annual convention. . . ."

4. Defined gross margin. The resolution calling for the building of additional specialty sales forces pointed out that specialized sales effort and sales promotion "has historically been proven the only successful method to develop the market for major appliances and electric housewares."

"Appliance distributors and retailers are today responsible for the marketing of many new products, such as electric dishwashers, driers,

(Concluded on Page 31, Column 1)

More New Items Than Forecast Shown at Mart

New Refrigerators and Freezers Top Appliances; Some Prices Altered

CHICAGO—The Midyear Home-furnishings Market furnished something of a surprise in that more new refrigerator and appliance items made their bow than had been expected. Some companies were showing as many as five new refrigerator models.

Attendance was on the "thin" side in the appliance sections the first couple of days, although the generally heavy registrations of buyers were reported. Most everyone seemed satisfied with the new market dates.

Norge Division of Borg-Warner Corp., showed five new household refrigerator models. Emphasis is being placed in promotion upon Norge's slogan that it is the "originator of automatic defrosting refrigerators."

Leader in the new models is the "first self-defrosting refrigerator" to sell for under \$200, the model SDM-65 will sell for \$199.95. It has 6.1 cu. ft. of storage capacity, the self-defroster feature, side evaporator, "Coldpack" meat keeper, and a large "Hydrovoir" vegetable container.

The self-defroster feature is also standard with the 8.2-cu. ft. SDM-85 and the SDM-85P (the latter an all-porcelain model). The SDM-85 lists at \$239.95 and the SDM-85P at \$269.95. These models have side evaporator, large-capacity Coldpack and Hydrovoir, and special interior trim and self-treatment.

Two new across-the-top freezer compartment models are the SFM-85 and the SFM-85P. With 8.1 cu. ft. capacity, the former sells for \$299.95 and the porcelain model lists at \$329.95. The freezer compartment provides space for 32 lbs. of frozen foods and 56 ice cubes. Features include full-width Hydrovoir, large Coldpack, and left-over dish set, package shelf, and dry storage bin.

The Whiting Appliance Co. line, introduced at the company's space in the Merchandise Mart, includes five refrigerator models, three home freezers, a room air conditioner, and a wringer-type washer.

Refrigerator line includes five models, with both the conventional and across-the-top type evaporators. Full-length doors are featured on all models. Price leader in the line is the model WH-8S, 8.2-cu. ft. capacity, with side evaporator, selling at \$199.50. Model WH-8D with 8.3 cu.

(Concluded on Page 29, Column 1)

Philco Introduces 2 Models; Plans To Push Refrigerators

ATLANTIC CITY, N. J.—Philco Corp. introduced two new refrigerators—a 9-cu. ft. model priced at \$274.95 and an 11.2-cu. ft. model retailing for \$299.95—at its national sales convention held here recently.

At the same time, the company announced that divisionalized sales operations will be set up in five major television markets—Philadelphia, Detroit, Cleveland, Chicago, and Los Angeles. Purpose of the new arrangement will be to insure that major appliances receive the same emphasis as does television.

Under the set up, instituted as the result of lagging refrigerator sales, two factory representatives will be assigned to each area. One will be responsible only for the merchandising of refrigerators, freezers, and air conditioners. The other will devote all his time to television and radio receivers.

Pointing out that white goods are largely neglected by some dealers in favor of television, John M. Otter, vice president and general sales manager, declared that all distributors will have to separate their sales forces sooner or later.

The convention was the largest in Philco's history and, according to the company, "the biggest in the history

(Concluded on Page 4, Column 4)

Golfer's Dream Comes True In Alabama



This is typical of the five drinking water cooler installations on the private golf course of Grand hotel on Mobile Bay in Alabama.

5 Water Coolers Spotted On Resort Hotel Course

POINT CLEAR, Ala.—Golfers who patronize the beautiful 18-hole private course maintained by Grand hotel, luxurious vacation spot on Mobile Bay, no longer have to wait for the 19th hole to obtain a refreshing drink.

Thirsty players now simply head for one of the five Temprite Model PB-10 water coolers which have been strategically located about the course.

Water supply to each cooler is carried underground through cork-insulated copper tubing. Wiring for the coolers also goes through underground conduit so that it will neither distract from the appearance or interfere with the flight of golf balls.

Installed by the hotel's chief engi-

neer, each water cooler is fitted with a remote bubbler outlet for caddies. According to Harry A. Peters, Jr., managing director of the hotel, similar water coolers are also being installed at the hotel's outdoor, fresh water swimming pool.

2 Dividends for July 3 Voted by Bush Directors

WEST HARTFORD, Conn.—The Board of Directors of The Bush Mfg. Co., has voted a dividend of 28½ cents per share on the 4½% cumulative convertible prior preferred stock, payable on July 3, to stockholders of record as of June 21.

It was also voted to declare a dividend of 31¼ cents per share on the 5% non-cumulative preferred stock, payable on July 3, to stockholders of record as of June 21.

Customer Can't Lose With 'Rain Check'

WILL IT RAIN TODAY?

WHY WORRY?
HERE IS YOUR RAIN CHECK FROM ROYAL APPLIANCE...

—GOOD FOR \$10.00—
Credit On Any Purchase Over \$79.00
When Presented At The
ROYAL APPLIANCE STORE
The First Rainy Day This Week!!!

FORECAST:—RAIN OR SHINE... WE WILL BE OPEN 'TIL NINE... TONIGHT!

MOZIER'S
ROYAL APPLIANCE
"TELEVISION HEADQUARTERS"
Corner River and Federal Sts. Troy 1738

TROY, N. Y.—A "rain check" gimmick was employed by Mozier's Royal Appliance, River and Federal Sts., to stimulate appliance business.

The rain check, carried in a newspaper advertisement, was good for \$10 credit on any purchase over \$79 when presented at the store on the first rainy day of the week.

Caption on the advertisement read: "Will It Rain Today?" Copy continued: "Why worry? Here is your rain check from Royal Appliance. Forecast: Rain or Shine, we will be open 'til nine—tonight."

A footnote added: "We would be so pleased to have nice weather for a change that even if it doesn't rain by Friday, we will still honor your rain check."

Appliance Wholesalers Show 38% Gain over 1949; Upward Trend Reported for Commercial & Parts

WASHINGTON, D. C.—April sales by appliances and specialties wholesalers were 38% better than in April, 1949, though off 11% from March, a report by the Bureau of the Census indicated recently. Their sales for the first four months of the year were 37% above the same period last year.

Wholesalers of commercial refrigeration equipment and parts reported

April sales 2% better than in April of 1949 and 9% better than in March. Sales were also 9% better for the four months period.

Inventories for the latter group were down 6% from April, 1949, but up 4% from March. Inventories of the appliance wholesalers were down 6% from April, 1949, and up 24% over March.

SALES

Kind of Business and Geographical Division	Per Cent Change		April 1950 Panel	
	Apr. 1950 from Apr. 1949	Apr. 1950 from Apr. 1949	No. of Firms Reporting	Reported Dollar Values (add 000)
Appliances and specialties wholesalers	+38	-11	99	24,769
New England	+60	-10	14	1,936
Middle Atlantic	+34	-7	21	11,160
East North Central	+66	-9	13	2,540
West North Central	+13	-16	12	2,035
South Atlantic	+43	-5	16	3,157
South Central	+8	-23	9	1,227
Mountain	+37	-	45	601
Pacific	+61	-30	9	2,113
Refrigerator equipment, parts (com'l)	+2	+9	26	1,013
Middle Atlantic	-6	+15	6	248
East North Atlantic	-8	+12	4	109
South Atlantic	-2	+2	5	174
Pacific	-11	+10	5	127

INVENTORY, END-OF-MONTH (AT COST)

Kind of Business and Geographical Division	Per Cent Change		April 1950 Panel	
	Apr. 1950 from Apr. 1949	Apr. 1950 from Mar. 1950	No. of Firms Reporting	Reported Dollar Values (add 000)
Appliance and specialties wholesalers	-6	+24	82	21,080
New England	+14	+32	12	1,679
Middle Atlantic	-24	+29	13	5,391
East North Central	+9	+5	9	1,539
West North Central	-2	+17	11	3,676
South Atlantic	-20	+19	15	2,799
South Central	+4	+36	8	2,208
Mountain	+2	+8	5	1,091
Pacific	+38	+41	9	2,697
Refrigeration equipment, parts (com'l)	-6	+4	20	2,172
Middle Atlantic	-	-	-	-
East North Central	-	-	-	-
South Atlantic	+9	+2	5	523
Pacific	-6	+6	5	369

Louisiana Keeps Fair Trade

BATON ROUGE, La.—A bill to repeal Louisiana's fair trade act, permitting manufacturers to establish minimum resale prices for their trade-marked products, was killed by the Judiciary "B" Committee of the Louisiana House of Representatives.

Name Superflow Distributor

CINCINNATI—Advanced Refrigeration Co. here, specializing in beer-dispensing equipment since 1939, has been appointed exclusive Superflow distributor in this area, according to an announcement issued by W. R. Kromer, president, Superflow Mfg. Co.

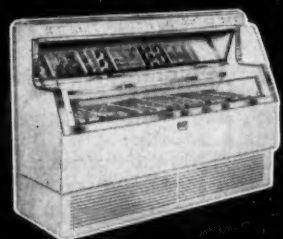
THOUSANDS OF HEAT-X COOLERS



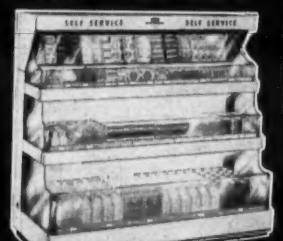
WATER COOLERS
SODA COOLERS
BEER COOLERS
COOLER CARBONATORS
HEAT EXCHANGERS

Thousands are benefiting by the advanced design of Heat-X Cast Aluminum Coolers. Separate liquid and refrigerant coils are cast in an aluminum block. Result: greater sanitation, freedom from freeze-up damage, higher efficiency, fast cooling, and economy of space.

THE HEAT-X-CHANGER CO., INC.
415 Lexington Avenue, New York 17, N.Y. Brewster, N.Y.



MODEL 1407 Self-service frozen food display case. Attracts and handles more buyers, invites more sales.



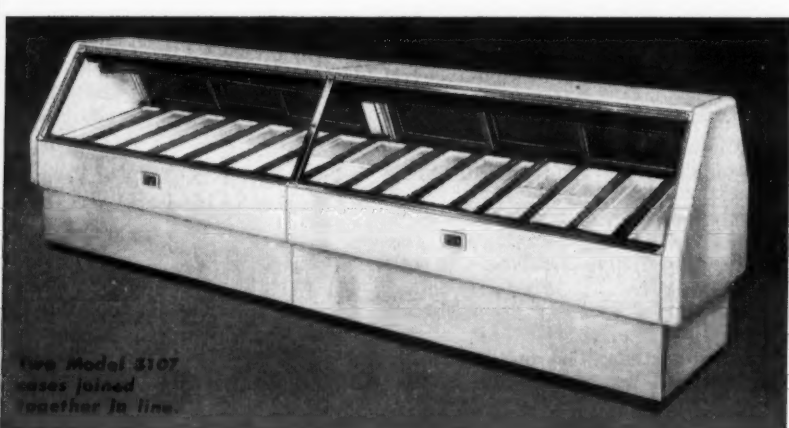
MODEL 306. The sensational open case with THREE refrigerated shelves. For profit-making impulse sales.



MODEL 6710. 10-ft. long open front case with extra wide display shelf. Ideal for produce display.



MODEL 5710. Open front self-service case for pre-packaged fresh meats, produce, or dairy products.



Two Model 3107 cases joined together in line.

ENDLESS DISPLAY ENDLESS APPEAL ENDLESS PROFITS

Set 'em up and start selling! KOCH Series 3100 top display cases come in basic 7-ft. and 10-ft. units. May be set up in any length, to provide an integral, unified, money-making display. Just note these incomparable features:

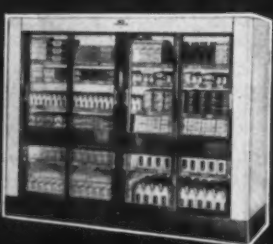
- QUALITY** Full porcelain enamel front, top, rear, ends, and interior walls. All steel, welded construction. Stainless steel floor. Hermetically sealed, triple plate glass front. Fibre glass insulation.
- APPEAL** Triple-glazed Loxit type sliding doors in molded hard rubber frames. Continuous K-Beam fluorescent lighting. Electro-welded steel shelves, adjustable to 3 positions. Fully-lined, non-refrigerated storage section.
- LONG LIFE** Proven KOCH Miraflex twin-coil cooling system. Insures consistent, trouble-free, economical operation.

KOCH
REFRIGERATORS

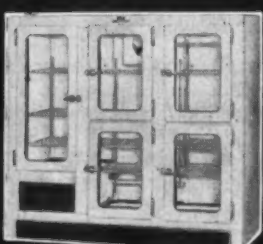
SINCE 1883

NORTH KANSAS CITY 16, MO.

THE QUALITY REFRIGERATOR LINE



MODEL 3508. Wall Type Display Case. For self-service display of dairy products or beverages.



MODEL 3865. A 65-cu. ft. reach-in refrigerator. One of the six popular Koch reach-in cabinets.

KOCH REFRIGERATORS
North Kansas City 16, Mo.

RN-12

Please send me at once, without obligation, complete information on profit-making Koch Display Cases and Refrigerators.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Frigidaire Celebrates 12,000,000th Unit With Meeting of Key Distributor Men

DAYTON—M. M. Roberts, General Motors vice president and Frigidaire general manager, has announced production of the 12 millionth Frigidaire refrigerating unit.

The announcement was made during a special meeting here attended by more than 300 key members of the company's national distributing organization.

The distributors meeting marks the opening of a series of 73 mid-summer sales meetings for more than 40,000 dealers and salesmen in 44 districts across the country. Sales, service, training, and advertising plans, especially designed to stimulate the mid-summer sales activity, were outlined by P. M. Bratten, general sales manager.

"We must not forget," Roberts stated, "that in addition we have also built and sold more than a million Frigidaire electric ranges, plus thousands-upon-thousands of other products."

Tracing the growth of Frigidaire from its early inception nearly 30 years ago, Roberts stressed the fact that the company has expanded its operation from a single refrigerator line to more than 45 groups of appliances, commercial refrigeration, and air conditioning equipment, numbering something more than 500 separate products.

According to Roberts the Frigidaire facilities have expanded from one small building to three huge plants, occupying nearly 4 million sq. ft. of floor space, and employing over 20,000 workers. In addition, there is a Canadian factory with 343,000 sq. ft. of floor space, as well as plants in several foreign countries operated by the overseas division of General Motors, Roberts explained.

G-E Names 6 to Posts In Advertising Division Of Appliance Dept.

BRIDGEPORT, Conn. — Six appointments to the advertising division of General Electric Co.'s Appliance & Merchandise Department have been announced by G. B. Park, division manager.

R. O. Sommers has been appointed operations supervisor of the division, succeeding E. F. Vickery, who has joined the sales manager's staff. Sommers was formerly responsible for operations of the major appliance advertising section.

R. W. Williams, has been named product advertising supervisor for major appliances. Formerly in charge of advertising for home laundry equipment, he is succeeded in that position by O. M. Lyon.

F. H. Keswick has been given responsibility for special advertising and promotion assignments connected with major appliances. He came to Bridgeport from the G-E Air Conditioning Department's advertising division in Bloomfield, N. J.

Lee Wichelns, who formerly handled advertising for electric sinks and cabinets, has been named editor of the G-E News Graphic. He is succeeded by R. C. Lindblom, who was with the air conditioning advertising division.

Keller, Aspholm Win Carrier Promotions

SYRACUSE, N. Y. — Election of Krantz Keller as treasurer and appointment of M. C. Aspholm as comptroller of Carrier Corp. has been announced by Cloud Wampler, president.

Keller joined Carrier in 1942 as a tax accountant, after 13 years with the Chase National Bank and Chase Securities Corp. in New York, and since 1944 has been manager of Carrier's tax department.

Aspholm started with Carrier in 1937 as an accountant and was named head of the department of statistics and budgets in 1944. He became assistant comptroller two years later.

Fred F. Hoyt and George N. Lilygren, Carrier vice presidents who were also treasurer and comptroller, respectively, have recently taken on additional management responsibilities, Wampler reported.

Sales Increase 20% for Ga. Appliance Dealers

ATLANTA—An increase of 20% in household appliance store sales in Georgia during April over the same month last year was reported recently by the Federal Reserve Bank of Atlanta.

The bank said, however, that reports from department stores in Georgia show that their average sales were down 4% from April, 1949. Total April sales in the state's furniture stores also were off 4% from April last year.

The fact that Easter this year was earlier than in 1949 was cited as possibly accounting for part of the decline in April sales from last year at the department stores.

For the first time in several months, the report said, installment sales of both reporting department and furniture stores in April were lower than during the like 1949 month. The household appliance store group had a 45% rise in installment sales.

Collections continued to run slower

this year on both charge and installment accounts at the state's department stores. The report pointed out that collections on installment accounts at these stores during April amounted to 11% of accounts outstanding at the beginning of the month.

This compares with a ratio of 18% for the like month of 1949. At Georgia furniture stores the collection ratio for April was 15% compared with 18% a year ago.

Johnson Heads Sales For Cordley & Hayes

NEW YORK CITY—The appointment of James L. Johnson as sales manager for Cordley & Hayes, manufacturer of ice and electric water coolers, is announced by C. M. Cordley, president.

During the past four years Johnson has been successively district manager and regional manager and prior to his joining Cordley & Hayes in 1946 was district merchandise manager for the Peninsular district of the Graybar Electric Co., Jacksonville, Fla.

A. O. Smith Will Enlarge Plant Facilities In East

MILWAUKEE, Wis.—Plans for expansion of A. O. Smith Corp.'s electric motor manufacturing facilities in the East have been announced by J. M. Floyd, executive vice president. The expansion is to be made at Tipp City, Ohio, where A. O. Smith recently bought Whirl-A-Way Motors, Inc.

Purchase of the Ohio concern followed a move in February in which A. O. Smith contracted with Whirl-A-Way for the manufacture of fractional horsepower motors to A. O. Smith specifications. The Tipp City operation now becomes the eastern motor division of A. O. Smith, with D. L. Mills, former president of Whirl-A-Way, as manager.

A new 60,000-sq. ft. factory is to be built this summer which, together with equipment, will represent an investment of approximately \$500,000. Construction is scheduled to begin in June, with production expected to be underway in September. Eastern sales and administrative offices will be located at Dayton, Ohio.



SUNISO ENDS EMERGENCY CALLS

Switch to Suniso Oil Eliminates Wax Problem, Assures Free Operation of Starting Mechanism

A bakery was experiencing trouble with a 2 hp. compressor used to operate an ice cream maker and hardener. Frequently it failed to start, causing the temperature to rise and the ice cream to melt. Each time, a serviceman had to be called in to overhaul the starting mechanism. Finally a thorough cleaning with heat and chemicals became imperative. When torn down, the refrigeration system revealed heavy wax deposits on the

thermostat valve, solenoid starter, strainers, and coils.

Realizing that the original charge of oil had been causing the damage, the serviceman recommended that the unit be recharged with Suniso. This was done, and difficulty in starting is no longer experienced.

Such dependable performance is the reason why Suniso Oils have long been the predominant choice of original equipment manufacturers throughout the refrigera-

tion and air-conditioning industry.

The different grades of Suniso Oils have extremely low pour points and low wax-separation points. All have exceptionally high dielectric strength and high resistance to chemical change when mixed with Freon or any other modern refrigerant. Ask your Suniso jobber for a free copy of the illustrated booklet "Lubrication of Refrigeration and Air-Conditioning Equipment" or write Department RN-6.

SUN OIL COMPANY • Philadelphia 3, Pa.

In Canada: Sun Oil Company, Ltd.
Toronto and Montreal

SUNISO REFRIGERATION OILS

"JOB PROVED" THROUGHOUT THE INDUSTRY



Chase To Head Marley Freezer Tax-- DriCooler Division

KANSAS CITY, Kan.—Jim C. Chase has been named manager of the recently expanded DriCooler sales department of the Marley Co., Inc. He has been located at the general offices here since joining the company late in 1948.



Jim C. Chase
lieutenant in the Navy, doing salvage and repair work.

Before coming to Marley, he was the southwest district manager for the Aerofin Corp. working out of Dallas, and before that had been a

Frigidaire Expands--

(Concluded from Page 1, Column 2) addition we are producing electric ranges, home laundry equipment, food freezers, electric water heaters, ice cream cabinets, frozen food merchandisers, refrigeration compressors, and other products in the same plant," he said.

"We have reached the stage where it is imperative from an efficiency standpoint that we have more factory space," Roberts explained. He added that the expanded facilities will provide greater flexibility in shifting production from one product or model to another in order to meet normal fluctuation in public demand.

(Concluded from Page 1, Column 4)

until next October.

The bill, as it stood last week on the eve of committee approval, would reduce the manufacturer's excise taxes on household refrigerators from 10% to 7% and place a 7% tax on home freezers, which have heretofore been exempt from excise taxes.

A complete exemption from the present 10% tax will be given to household cooking stoves and water heaters, heating pads and blankets, fans not of the household or office type, baby bottle warmers, hand irons, electric air space heaters, and toasters.

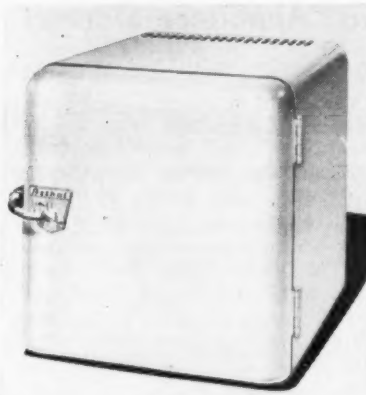
The tax will be retained on other electric, gas, and oil appliances, as well as on air conditioners and other refrigerating apparatus.

Home freezer interests are said to be preparing to fight the proposed tax on their product on the Senate floor, if they get the chance.

One of the last items to be approved by the committee was an increase in corporate taxes. The new bill would provide a 21% tax on the first \$25,000 of net income and a 41% tax on all net income above that amount.

Committee officials indicated that this would give some relief to smaller firms and pick up extra revenue from larger corporations. They also were of the opinion that the bill would lose only about \$12,000,000 in tax revenue for the government. Treasury officials, however, predicted a deficit of about \$150,000,000.

Absorption Model



Astral's new lightweight absorption refrigerator which is being produced at the rate of 600 units per day. It is said to weigh about 60 lbs. and measure less than 2 by 2 by 2 ft. Retail price is \$129.95.

Astral Distributors--

(Concluded from Page 1, Column 2) which is of heavy gauge steel porcelain enameled exterior with interior being baked-on enamel over aluminum. Three-inch Fiberglas batt insulation is used.

Compactness and light weight of the Astral suggest it for use in trailers, small homes and apartments, cottages, cabins, motels, camp lodges, doctors' offices, etc., the company says, pointing out that it can be moved or carried with comparative ease.

Craighead, the new sales manager, was formerly sales manager of the Bendix Ironer Div.

Philco Meeting--

(Concluded from Page 1, Column 5) of the appliance industry." Attending were about 1,500 distributor representatives, 5,000 dealers, and 500 Philco representatives from 18 foreign countries.

James H. Carmine, executive vice president, announced at the conclusion of the distributor convention that a total of more than \$100,000,000 at the factory level in orders from distributors for new 1951 products was booked. This is 25% more than the total of orders placed at the January convention, and a new high for such a meeting.

He said the most expensive advertising and promotion program in Philco's history will soon be launched by the company and its distributors and dealers. About \$25,000,000 in all media will be involved.

Distributors were told that the company is aiming for a 1950 total sales volume in excess of \$300,000,000, which would be a new record. It hopes to sell more than 1,000,000 television sets.

Thomas A. Kennally, president of the refrigeration division, said the division is looking for "the biggest year in our history." He put its estimated 1950 business at \$80,000,000. For the first time, he declared, the division is planning "to go after the new apartment house business."

Philco is appropriating "a record sum for tools and dies for a 1951 line of refrigerators and freezers that will be new from top to bottom," Kennally stated. This line will be shown early next year.

The first six months of this year will be "the greatest by a wide margin," William Balderston, president, asserted. He reported that a \$1,500,000 expansion of Philco's electric range plant in Mt. Clemens, Mich., is expected to be completed by the end of the year. He said this will enable the doubling of the company's current output.

In addition to the new refrigerator models, Philco showed its new line of 34 television models, with five sizes of picture tubes, and 27 radio and phonograph models. The company also announced its re-entry into the automobile radio field with three models.

G-E-Macy Suit Will Start on Sept. 11

NEW YORK CITY—Four manufacturers of housewares were granted injunctions against retailers to prevent the dealers from selling their fair-traded goods at below established prices in recent court actions. One manufacturer filed suit against two more dealers, and another was denied an injunction.

The trial of the suit brought by General Electric Co. against R. H. Macy & Co. has been set for Sept. 11. Sunbeam Corp. won two injunctions against dealers. Defendant in one case was Sam Diamond of New York City and in the other S. A. Wentling of Palmyra, Pa.

National Pressure Cooker was given a permanent injunction against Penn Merchandise Mart, Inc., here. A temporary injunction was granted to General Electric Co. against National Sales Co., another Gotham dealer.

Pending trial, Disco New York, Inc. was enjoined from selling products of Revere Copper and Brass Co. at below established prices.

Application for a temporary injunction against Econo-Mart Purchasing Service in Jamaica, Long Island was denied to Westinghouse when the defendant was able to show that a Westinghouse subsidiary in Brooklyn was selling to the retail trade at less than established retail prices.

Justice Cuff of Queens county supreme court declared: "The clean hands equitable maxim has application, if it can be established. The clear legal right to a temporary injunction is lacking."

Temporary injunctions against Masters, Inc. and Central C. U. Purchasing Agency here have been asked by Proctor Electric Co. Proctor is seeking a permanent injunction and damages.

To Cool St. Louis Hotel

ST. LOUIS—Bernard Tureen and Associates, new owners of the Baltimore hotel at Ninth and Pine Sts., will modernize and air condition the building at a cost of \$250,000.

Year-Round Comfort



Carrier Unit--

(Concluded from Page 1, Column 3) produced by Carrier in 1948, which was used in conjunction with a self-contained Weathermaker.

The new Carrier unit is said to be sufficiently quiet and compact for installation in a room adjoining living quarters. This, plus the fact that it can be serviced from the front, and is so equipped that return air can be drawn into the unit from the bottom, makes it particularly suitable for use in homes of ranch-type construction, the company stated.

In basement installations, the air intake can be installed at the back of the cabinet, and the flue connection can be made either from the top or side. Side panels can also be removed for even greater servicing ease.

A single thermostat controls the temperature for heating and cooling, with simple changeover from summer to winter operation.

The casing of the new 38B is Bonderized, and finished on the exterior with stain, burn, and mar-resistant baked enamel. The heat interchanger and combustion chamber are constructed of aluminized steel, completely electric welded to provide one-piece sealed construction.

Chappell To Assist Pres. At Automatic Firing

ST. LOUIS—George A. Chappell, Jr., with the Union Electric Co., St. Louis, for 20 years, has joined the Automatic Firing Corp. as assistant to the president. He will be in charge of production engineering.

Chappell served Union Electric eight years as assistant department head of the rate and statistical department and four years as industrial engineer.

While industrial engineer for the electrical utility, Chappell worked with many of the largest manufacturers in St. Louis.

Count these BENBAR features! They add up to MORE SALES!



- Hermetically sealed condensing unit
- Panelite covered door jams—Frost breaking lock
- Trouble free capillary system
- Two step door construction
- 4" fiberglass insulation

Sell the kind of freezer that all America is demanding. 2 standard sizes—14 and 17 cu. ft. DISTRIBUTORSHIPS NOW AVAILABLE

No contemplated price increases between now and June 1, 1950 in spite of steel increases.

**AUGUST G. BARKOW
MANUFACTURING CO.**
2230 S. 43rd St., Milwaukee 15, Wis.

BRUNNER
SINCE 1906

AIR CONDITIONING builds business

WHAT'S KEEPING YOU AWAY

from Air Conditioner Profits?

PRODUCT

Brunner self contained floor type room air conditioners are available in 4 popular sizes—3, 5, 7½ and 10 ton. Completely Brunner built...backed by 44 years of engineering "know how." By every standard of comparison an outstanding product worthy of your confidence.

INVOLVEMENT

Packaged air conditioning is simple to sell, install and service. No involved technical knowledge is required. Recommendations are determined through a few easily figured facts. Packaged air conditioning is a natural part of any refrigeration and appliance business.

SALES HELP

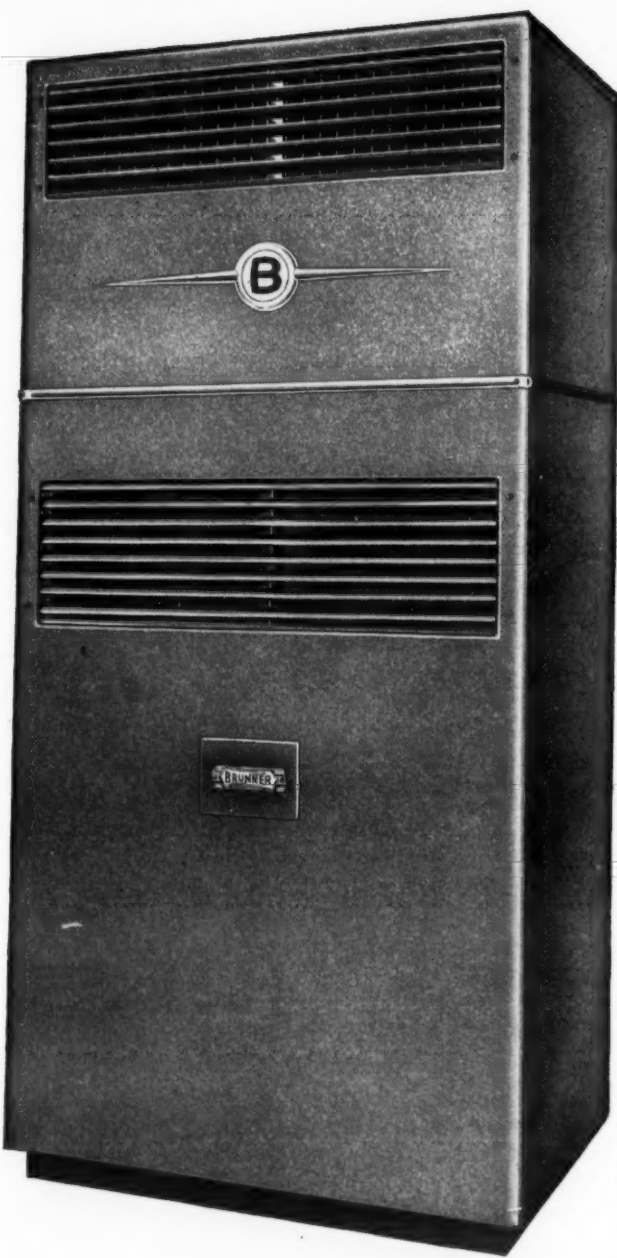
Brunner field-sales engineers are so located across the country as to be readily available to help on every occasion when called upon. Brunner advertising to "users" in many fields has paved the way to recognition and acceptance of Brunner as the top value in air conditioning.

MARKETS

All around you! Practically every business depending upon store traffic, wants and needs air conditioning. The opportunities are legion. The Brunner field man will show you how to contact and close sales.

PROFIT

Brunner Air Conditioning builds business...yours and your customer's. Don't let this extra income pass you by. Write or wire for a Brunner representative to spread the facts before you. You can't miss recognizing the superiority of Brunner Air Conditioners as a product and as a new business opportunity.



BRUNNER
SINCE 1906

AIR CONDITIONING

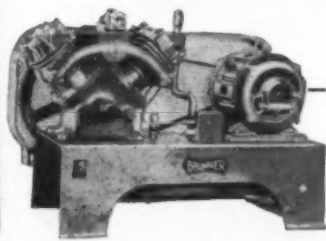
- Self Contained 3 HP. to 10 HP.
- Remote Type 5 HP. to 75 HP.

BRUNNER MANUFACTURING CO., Utica 1, New York, U.S.A.

REFRIGERATION CONDENSING UNITS by

AIR AND WATER COOLED MODELS—a size and type for every purpose...¼ HP. TO 75 HP.

BRUNNER
SINCE 1906



Sherer-Gillett Appoints Greene Asst. Treasurer

MARSHALL, Mich.—The Sherer-Gillett Co. has announced the appointment of Carl F. Greene as assistant treasurer of the company. Greene has been associated with the treasurer's office since June of 1946.

He served three years in the Navy and was assigned to various Naval Intelligence units as a chief yeoman and served in Veracruz, Mexico; Casablanca; French Morocco; and at Bremerhaven, Germany.

Prior to that he was a civilian employee of the U. S. Navy Department and lived in Suva, Fiji Islands, for a year and a half as one of two men operating an observer's office there.

Greene is a graduate of the Lansing Business university in Lansing, Mich. and the Washington School of Foreign Accounting in Washington, D. C.

Before joining the government service he was employed as an accountant for the Motor Wheel Corp. and the Lansing City Lines, Inc.

Refrigerated Case Triples Candy Sales to Tourists

GOLDEN, Colo.—A stainless steel display refrigerator, which fits neatly into the lines of the store, has more than tripled summer sales of boxed chocolates and other perishable candy for Foss Drug Co. here.

Although the township of Golden has a year-round population of only 7,000, it is thronged each summer with many thousands of tourists, visiting the Colorado Rockies. However, because of high summer temperatures, owner Frederick Foss of the drugstore found it was most difficult to show better-priced candies at a time when the market was at its peak.

The solution, he reasoned, was refrigerated display of so large a capacity that it would be possible to double or triple the candy display without danger of meltage or other damage.

The display cabinet, 12 ft. long and 4½ ft. high, is kept at a smooth 35° by a ¾-hp. remote condensing unit, and features three sliding glass doors, at a 45° angle, along the top front of the case, through which customers may "serve themselves." Non-heat-producing cold cathode lamps are used to illuminate the interior, and make the trade-mark of the three nationally-advertised chocolate brands shown in the interior readily visible to customers of any height.

As many as 60 boxes of chocolates may be conveniently shown in the two sections devoted to candy, while the third is used the year-round for biological drugs, which demand constant refrigeration.

Johnson Service Co. Opens 11 New Branch Offices

MILWAUKEE—Johnson Service Co., here, manufacturer of automatic temperature and air conditioning control systems, has announced the opening of 11 new branch offices.

Part of Johnson's continuing expansion program, the new branches are intended to provide better service and coverage of customers, both on new installations and on service work.

At the same time, the company announced the transfer of sales engineers in charge of the new offices. New branches, the engineer in charge, and the branch from which transferred follow:

Birmingham, Ala., appointment pending; Dayton, Ohio, appointment pending; Harrisburg, Pa., Neal J. McGee, Philadelphia; Jacksonville, Fla., John R. Spence, Atlanta; Knoxville, Tenn., Trevor D. Reiley, Cincinnati; Memphis, Tenn., Edwin A. Smith, St. Louis; Oklahoma City, Andrew H. Scott, Kansas City; San Antonio, Tex., Eugene Criss, Cleveland; Shreveport, La., Fred A. Dupre, New Orleans; Syracuse, N. Y., George C. Kugler, Albany; and Providence, R. I., John P. Delaney, Boston.

Servel Starts Broad Push On Gas Air Conditioner

DETROIT—A comprehensive advertising program will break in the near future on the Servel year-round gas-operated air conditioner, marking the first time Servel will have promoted sales of this item in a broad manner. W. Paul Jones, president, stated in his talk before the Advertising Federation of America here.

Jones said that advertising has been a major factor in increasing the firm's sales of gas refrigerators 50% during the first half of its current fiscal year, and influenced the decision for the campaign on the gas-operated air conditioner which Servel manufactures.

However, Servel's president said that experience and studies showed that "advertising alone" won't do the job—that it merely proves interest or creates preference on the part of the consumer, but that aggressive selling by retailers and their salesmen is all-important in closing the sale.

Loblaw Market Features Five Refrigerated Rooms

UTICA, N. Y.—Air conditioning and refrigeration are used extensively in the new Loblaw Supermarket at 1709 Genesee St.

The more than 12,000 sq. ft. of floor space accommodates not only spacious, refrigerated self-service departments for meats, produce, dairy products, and frozen foods, but also houses refrigerated food preparation and storage facilities.

These include five large, independently refrigerated rooms, plus the meat-cutting room. Meats, dairy products, and other perishables each receive the special degree of refrigeration scientifically established to preserve their individual freshness.

Marlin Associates To Move

DALLAS—Marlin Associates, southwestern distributor of fixtures, appliances, and materials in the electrical field, will have a new million-dollar air conditioned home on Central Expressway, according to Morris Margolin, president.

City Terminals Not Adequate To Handle Fresh Produce, House Committee Hears

WASHINGTON, D. C.—Witnesses for the Department of Agriculture and the National Grange recently told the House Agricultural committee that wholesale produce terminal facilities in most cities are not adequate for handling of perishables.

Both men were testifying in favor of a bill offered by Harold D. Cooley, Democrat of North Carolina, to make \$75,000,000 of Federal funds available for loans and insurance to aid in building adequate wholesale markets.

William C. Crow, director of the agriculture department's marketing facilities branch, claimed that the difficulties of getting produce in and out of the wholesale markets materially raised the prices of fresh fruits and vegetables to consumers.

He asserted that half of the retail price went into the cost of handling after the produce had reached the market. He spoke specifically of the New York City market though he

indicated that other cities were in the same situation.

He declared that the proposed bill was necessary because it was difficult to get wholesale marketing groups together to arrange new facilities on their own.

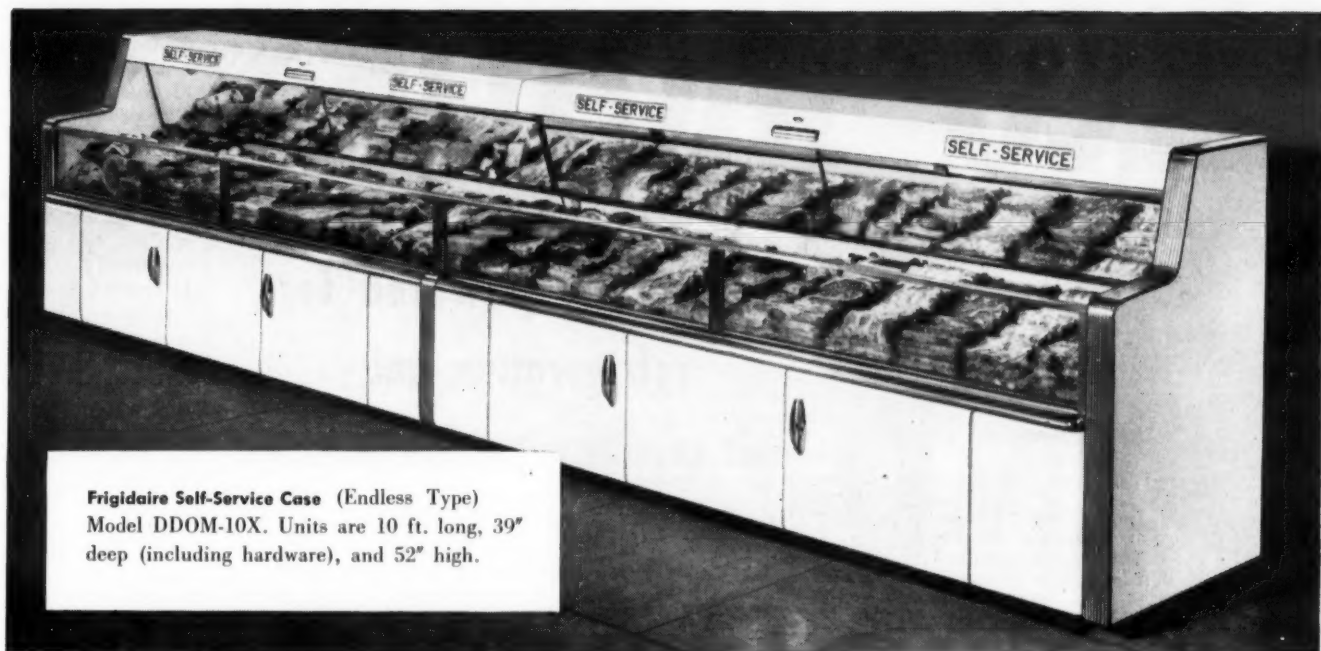
Albert S. Goss, speaker for the National Grange, said that one of the farmer's most serious problems lies in the congestion at wholesale markets.

He asserted that such conditions have existed for years but that private interests or the cities have done nothing about them.

A Philadelphia real estate dealer, testifying before the committee, intimated that local politics and pressure groups would not permit cities to build modern facilities.

He felt that the availability of Federal funds would offer sufficient incentive for wholesalers to make changes and for banks and insurance companies to make loans.

Look! Frigidaire's New Endless-Type Cases! 2 More Big Profit Opportunities for Frigidaire Dealers!



Frigidaire Self-Service Case (Endless Type)
Model DDOM-10X. Units are 10 ft. long, 39" deep (including hardware), and 52" high.



Frigidaire Top Display Case (Endless-Type)
Model SDM-10X. Units are 10 ft. long, 39" deep (including hardware), and 50" high.

Here they are—Frigidaire's great new Self-Service and Top Display Cases—featuring endless construction!

It's easy to see the strong appeal of their attractive modern styling! It's just as easy to judge the selling power of their new safe-cold design—product of Frigidaire's 30 years experience in manufacturing high quality refrigeration equipment.

And when you add the extra advantage of

endless construction, you know why Frigidaire Dealers can look forward to a bigger display case business—in the profitable large and medium store market.

These new Frigidaire Endless-Type Display Cases are just two examples of the profit builders that are constantly being added to the great Frigidaire line. They're just two of the many reasons why you can't match a Frigidaire Franchise!

You can't match a
FRIGIDAIRE
FRANCHISE



18% More Capacity Cited as Chief Property of Carrene-7; ASRE Gets 'Progress Report' on New Carrier Refrigerant

KANSAS CITY, Mo. — Carrene-7, the new refrigerant developed by Carrier Corp. to increase the capacity of existing systems and meet other requirements, was described in considerable detail at the 37th spring meeting of the American Society of Refrigerating Engineers by C. M. Ashley, chief Carrier development engineer.

In presenting what was admittedly a "progress report" on the subject, Ashley told the society that the new refrigerant (a mixture of "Freon-12" and Genetron-100) would provide 17% to 18% more capacity than "Freon-12."

NOT YET AVAILABLE

Patented by Carrier following its invention by Dr. W. A. Pennington, chief chemist and metallurgist of Carrier, and W. H. Reed, Carrene-7 is not yet available commercially, and Ashley declared that "it is not practical to make a statement as to when it will become available."

There is a need for such a refrigerant, Ashley said, "because motors come in definite steps of size and it is desirable to match compressor load against the motor power; also because refrigeration requirements occur at all loads and it is desirable to have small steps of capacity available to match the refrigeration cycle."

"With the old slow-speed compressors one could adjust them to meet capacity requirements by the use of pulleys to change the speed.

But now we have high-speed machines in which it is much harder to change speeds."

The bulk of the sales potential for "Freon-12" systems today lies in comfort air conditioning where compressors are designed to operate at 1,750 r.p.m. and to balance off against motor sizes of 5, 7½, 10-hp., etc., he indicated. In some instances as much as 20% more refrigeration capacity can be used, but changing compressors is usually unwarranted and uneconomical, Ashley said.

Section Gets Charter



During the ASRE spring meeting in Kansas City, a new section, Carolina, represented by L. E. Horton (right), director, formally received its charter from Ralph Westcott, chairman of the sections committee.

Carrene-7, he declared, should then be "especially useful" in the following situations: "Filling job requirements falling between existing compressor capacities; matching additional motor sizes within and beyond the 'Freon-12' compressor line for air conditioning loads; utilizing full motor capacities for commercial refrigeration; increasing the capacity of existing installations without major modifications; and raising the capacity of 50-cycle systems to equal the 60-cycle system using 'Freon-12.'"

Properties of the new refrigerant were listed by Ashley as follows:

Boiling point at atmospheric pressure is -28° F. At 120° F. the pressure is 205 p.s.i.a.

Pressure-temperature curve runs about midway between "Freon-12" and "Freon-22." This ranges from 17.79 p.s.i.a. at -20° to 263.8 p.s.i.a. at 140° F. At 40° F. the pressure is 60.87 p.s.i.a.

Average molecular weight is 99.56. It is non-flammable to 300° F. It is non-toxic, being comparable in this respect to the commonly used "Freons," Ashley said.

Chemically stable, Carrene-7 has the same order of oil miscibility as "Freon-12." It is more soluble with water, being comparable to "Freon-22."

In reviewing the problem of developing a new refrigerant by mixing two existing refrigerants, Ashley pointed out that the two usually have different pressures, which is apt to

St. Louis Section Entertains ASRE Party



High spot of the Monday night party at the recent ASRE spring meeting were choral numbers by members of the St. Louis section (augmented), including Ed Ince, Al Loeffel, Arley Baker, Jack Caulk, Herman Spoehrer, Art Bernthal (Detroit), Bill Carmody, and John Schenk.

give difficulty in the vapor phase due to the different boiling points of the components.

The original mixture is of definite proportions, but due to the different boiling points, the proportions are changed with a loss in head and rise of entropy.

"There are, however, certain mixtures called azeotropes which have the distinctive property of maintaining a constant boiling point and composition as they are evaporated," Ashley explained. "Such mixtures act, for all practical purposes, as though they were a single compound and cannot be separated by any ordinary physical process such as distillation."

"Usually such an azeotrope has a higher pressure than that of either of its constituents. Perhaps the best known azeotrope is that between alcohol and water which occurs at 190 proof (95% alcohol)."

IS AZEOTROPIC MIXTURE

According to Ashley, Carrene-7 is such an azeotrope formed of approximately 74.2% "Freon-12" and 25.8% asymmetrical difluoroethane (Genetron-100).

Vapor and liquid phase curves prepared by Ashley for the composition of the mixture over pressure range of 37.5 p.s.i.a. to 55 p.s.i.a. at 32° F. showed that "the vapor which is in equilibrium with the liquid is at every point closer to the azeotropic composition than is the liquid. Thus, the effect of distillation and rectification of the vapor is to cause it to approach the azeotropic mixture rather than either one of the constituents."

"For this reason, if the refrigeration system is initially charged with the azeotropic mixture, there is no tendency for separation to occur," Ashley asserted. "There is a slight shift in the composition of the azeotrope with temperature, but since the vapor pressure is not sensitive to small composition changes near the azeotropic mixture, the practical effect of this shift is negligible."

TEST RESULTS REPORTED

Results of comparative tests on Carrene-7 and "Freon-12" were also reported by Ashley, including a calorimeter test on a 5-hp. compressor driven by a cradle-mounted dynamometer with the test conditions being 40° F. saturated suction temperature; 65° F. suction gas temperature, and 105° F. saturated discharge temperature.

"Carrene-7 showed, with respect to 'Freon-12,' a capacity of 117.5% and a power input of 117.3% when running at 1,750 r.p.m. When the same compressor was run with Carrene-7 at 1,458 r.p.m. to simulate 50-cycle operation, the comparison with the 'Freon-12' compressor running at 1,750 r.p.m. was 98.25% of the capacity and 92.7% of the power....

"A further laboratory check of the relative performance of Carrene-7 and 'Freon-12' was made in a 3-ton self-contained unit with the 'Freon-12' compressor operating at 60-cycle speed and the Carrene-7 at 50-cycle. Tests were run with 67° and 78° F. entering wet bulb air temperature and 75° F. entering and 95° F. leaving water temperature. The Carrene-7 tests at the 50-cycle speed showed slightly better performance than the 'Freon-12' at 60-cycle," Ashley declared.

Extensive field tests have also been in progress and the results "have been highly gratifying and have further demonstrated the practicability of the new refrigerant," he added.

Practical application of Carrene-7 to achieve the full increase in capacity possible (approximately 18%) requires that the capacity of the other elements of the system be likewise increased approximately 18%, he cautioned, referring to the condenser and its cooling medium, and evaporator and its heat-transfer medium, and the motor capacity.

"If only the refrigerant is changed, however, a capacity increase of 10% with a horsepower increase of 17% may be expected. Where city water is used and the water valve is readjusted to maintain the same condenser temperature as before, it would be expected that the capacity would increase approximately 12% and the horsepower 15%."

"It has been found that, for evaporator temperature in the range used for comfort air conditioning, Carrene-7 can be used with the expansion valves designed for 'Freon-12' by a readjustment of the setting. For lower temperatures, suitably charged expansion valves are readily available."

CHANGES REQUIRED

"For systems which use a capillary restrictor, a new restrictor must be chosen. The same high and low pressure cutouts, pressure controls, and water valves as used on 'Freon-12' systems can be used for Carrene-7 systems but will require a suitable change of the adjustment."

"It should be recognized that Carrene-7 operates at approximately 18% higher pressure than 'Freon-12'; therefore, the refrigeration systems must be suitable to withstand this higher pressure," Ashley warned. "Fortunately, the amount of the increase is small enough so that this will seldom involve any type of difficulty."

"Since the moisture solubility of Carrene-7 is several times as great as 'Freon-12,' there is less danger of difficulty due to the precipitation of moisture in the form of ice. However, it is still advisable to maintain the same standards of dehydration of the system as with 'Freon-12,'" Ashley concluded.

DELCO MOTORS



Delco Single-Phase, Repulsion Start-Induction Fractional Motor, ½ through ¾ h.p. Also available in these sizes (only) with Condenser start.



Delco Single-Phase Fractional Motor with current-limiting Capacitor, ½ through ¾ h.p. For Blowers and open type Compressors.

Specifically powered for refrigeration and air conditioning equipment

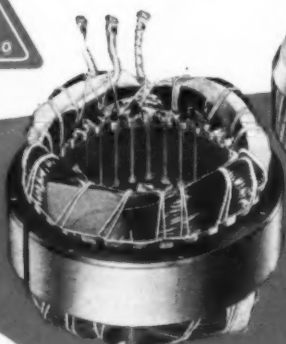
Delco motors—both open type and hermetic—are especially designed and quality-built to meet your individual requirements. They are quiet, long-lived, dependable—are backed by a nationwide service organization with large stocks in the field. For the right answer to your motor problem, write or call Delco Products, Dayton, Ohio, or the nearest sales office.

DELCO MOTORS

DELCO PRODUCTS

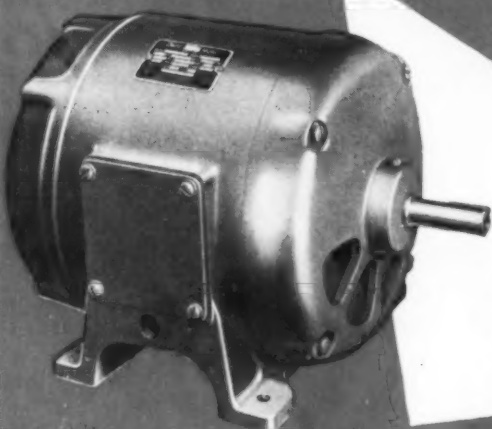
Division of General Motors Corporation, Dayton, Ohio

SALES OFFICES: Cincinnati • Cleveland
Chicago • Detroit • Hartford • Philadelphia



DELCO HERMETIC MOTORS

Delco hermetic motors ½ horsepower up—split phase, condenser start, condenser start-condenser run—are precision-made to give your products long years of efficient operation.



Delco Single-Phase, Repulsion Start-Induction Integral Motor, 1 through 5 h.p. Polyphase Integral, 1 through 100 h.p.

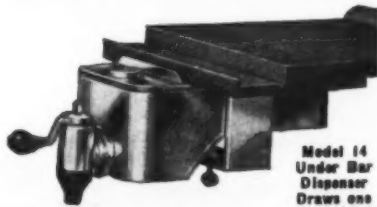
DEALERS - DISTRIBUTORS WANTED!

If you are prepared to handle sales, installation and service for our stainless steel soft drink Dispensers for Bars and Taverns, advise business experience and some facts relative to your financial ability.

INCREASES PROFITS FOR BARS AND TAVERNS

Exceptionally profitable to handle.—Write to

MULTIPLEX FAUCET CO. 4325 DUNCAN, Dept. ARN-14, ST. LOUIS, MO.
MANUFACTURERS OF SOFT DRINK DISPENSERS OVER 45 YEARS



Model 14 Under Bar Dispenser Draws one sweet drink and softener

Cold Air Duct Keeps Water and Syrup Cool For Carbonated Drinks

CHICAGO — New beverage dispensing components are now available which make it possible to dispense a wide variety of mixes and chasers at-the-bar from draft arms instead of from bottles. A fine example of this addition of beverage dispensing components to existing bar equipment is the installation at the Lawrence-Western Bowling Lanes in Chicago.

A cardinal principal in producing high quality carbonated water and mixed carbonated beverages is to keep the water and syrup cold from start to finish, for unless this is done, the snap and zest will not be present in the finished drink.

In the Lawrence-Western system, which was installed by Leonard M. Nissen, using Bastian-Blessing equipment, the three-station bar is supplied from a walk-in cooler in the basement. The new components located in this walk-in cooler include a carbonator, two syrup tanks of 2-gal. capacity, as well as a CO₂ regulator.

The new components located at the draft station include two mixing head draft arms, and one plain carbonated water draft arm. Two 3/4-in. stainless steel leaders "Y" off from the outlet of the syrup tanks to the two stations at the bar that are equipped for dispensing the products of the system.

The CO₂ regulator maintains a uniform pressure on the syrup tanks at all times. This enables the syrup to flow at a constant rate at the mixing head draft arm mounted in the dispensing unit at the bar. One of the mixing head draft arms is for ginger ale and the other is for cola.

The leaders from the carbonator and the syrup tanks in the walk-in cooler are brought up through a cold air refrigerated duct into the dispensing cabinet where the lines are cold air blasted before being attached to the draft arm. Thus, the water and syrup are kept cool throughout their entire transfer from the walk-in cooler to the draft arms.

According to Bastian-Blessing officials, the space-saving elements of such an installation can be visualized when it is considered that the equivalent of 5 cases, or 120 6-oz. bottles of bottled beverage can be produced from a single 1-gal. jug of syrup.

Through the use of a system of this type, a high quality carbonated water can be produced for as little as two or three cents per gallon, assuming average costs of CO₂ gas, electricity, and water, the company claimed.

Bastian-Blessing has a detailed analysis of the Lawrence-Western Bowling Lanes installation which is available by writing to the company, 4245 W. Peterson Ave., Chicago.

Gustine's Restaurant Gets New Refrigeration, Cooling

PITTSBURGH—New air conditioning and refrigeration equipment has gone into Frankie Gustine's restaurant which opened May 1 at 3802 Forbes St. near the Pittsburgh Pirates baseball park.

Gustine replaced famed Pie Traynor at third base for the Pirates, was traded to Chicago, now plays for the St. Louis Browns.

New equipment at Gustine's restaurant includes a 10-ton and a 5-ton Frigidaire air conditioning unit (ASL 500; SC1001), replacing ventilating fans; a 30-cu. ft. reach-in refrigerator; and a 4-ft. salad display case. The restaurant's ice machine was moved downstairs.

Units were installed by Wade Olson, Olson Co.

REFRIGERATION & AIR CONDITIONING
UNITS • PARTS • TOOLS • SUPPLIES

Get ALL your needs
delivered to your door
by fast AIRO service.
Save time and money

Write for catalog 49A
on your letterhead.

AIRO SUPPLY CO.
2732 N. ASHLAND AVE., CHICAGO 14, ILL.

Mixes and Chasers Served from Draft Arms Instead of Bottles



ABOVE: The draft station has (1) two mixing head draft arms, and (2) a plain carbonated water draft arm. These are in addition to those for beer and plain water.

LEFT: Walk-In Cooler showing: (1) wall-mounted carbonator, (2) syrup tanks, and (3) CO₂ regulator.

Buffalo's Jumbo Market Features Cut Flowers

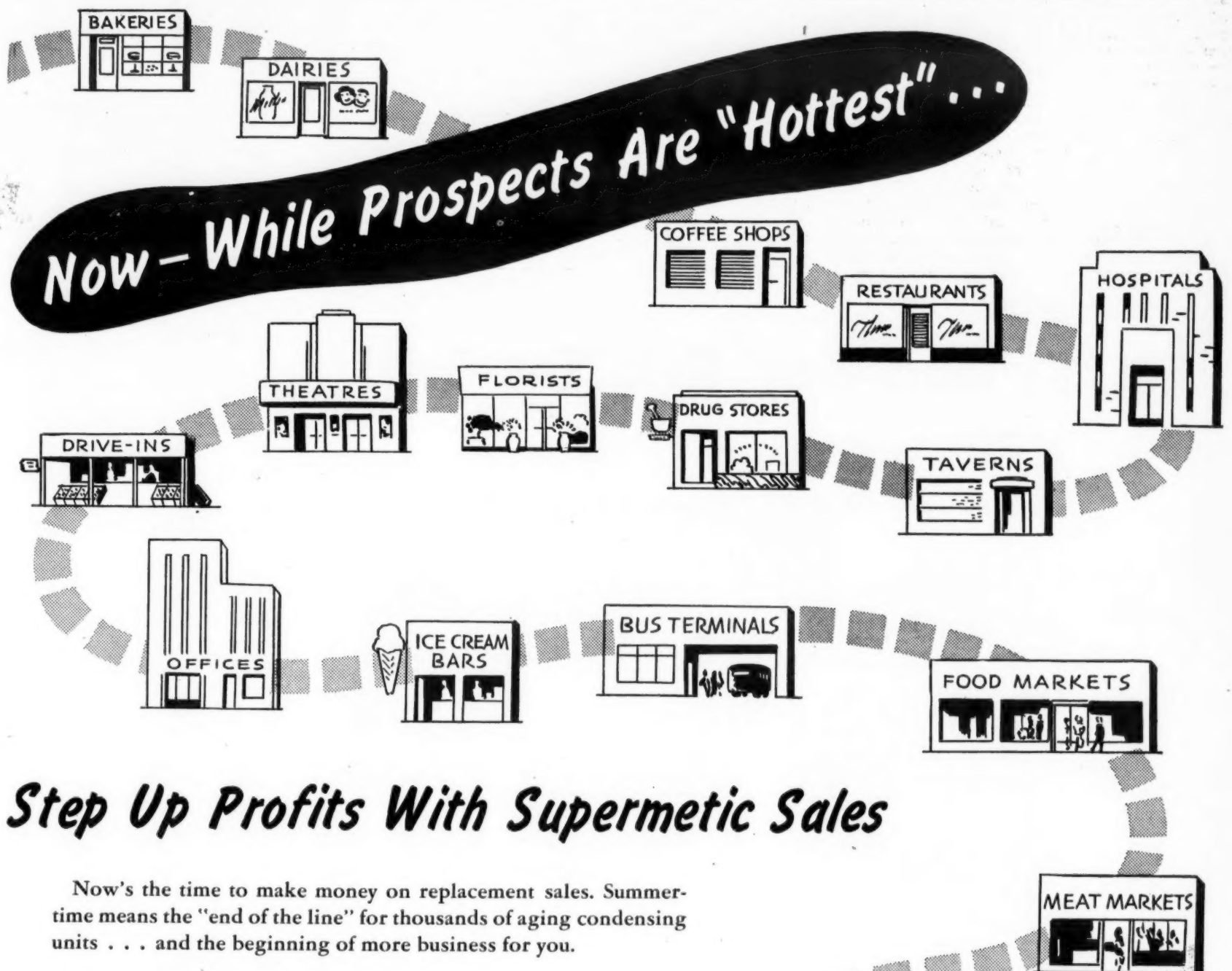
BUFFALO — A large refrigerated case enables Keller's Jumbo Market, Washington St., to do a lucrative business in cut flowers along with its heavy food volume.

Located in the heart of the downtown shopping area, the market management finds that many downtown shoppers, store employees, and office workers who patronize the Jumbo Market frequently are looking for flowers for special occasions or merely for home decoration.

The market makes a strong play for this business by having the refrigerated case set up near the main entrance.

Remick In Mason & Lowman Post

CINCINNATI — John R. Remick, formerly with the national accounts division of Frigidaire Corp., has been named sales manager of the air conditioning and refrigeration department of the Mason & Lowman Co. here.



Step Up Profits With Supermetec Sales

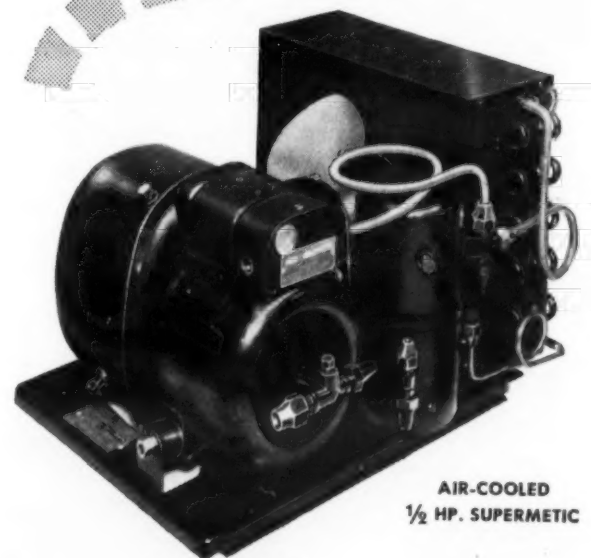
Now's the time to make money on replacement sales. Summer-time means the "end of the line" for thousands of aging condensing units . . . and the beginning of more business for you.

You'll find many compressors in need of replacement now. Others will need replacement soon. *All are prospects for summer sales of Servel Supermetics!*

You Don't Have to Be a Super Salesman . . .

. . . to sell Servel Supermetics. There's a size to fit any requirement (1/4 to 3 H.P.). Performance features meet every modern demand . . . and all fractional models are backed by a Five-Year Protection Plan.

To help you get a full share of this replacement business, Servel offers you a Supermetec Sales Kit, which includes complete information on the new Supermetec Line, the 5-Year Protection Plan and samples of helpful sales materials. Write today to Servel, Inc., Electric Refrigeration Division, Dept. A-64, Evansville 20, Ind.



AIR-COOLED
1/2 HP. SUPERMETEC

SUPERMETICS ARE AVAILABLE EVERYWHERE

There's an authorized Servel Wholesaler near you who carries a complete stock of Supermetics and genuine Servel Parts. They are ready to give you fast, reliable service on your requirements. Today, build your business and profits around Supermetec sales and service. Send for the address of your nearest wholesale distributor.

Servel
SUPERMETIC

Models for every electric refrigeration and air conditioning use . . . 1/4 to 5 H.P.

21 Movie Playlets Filmed For Theater Advertising By Westinghouse Dealers

MANSFIELD, Ohio—Twenty-one movie playlets of major appliances for use by retailers have been announced by the Westinghouse Electric Appliance Division.

These films are designed for theater advertising throughout the nation as part of regular theater performances. One third of each playlet is devoted to the local dealer's name, address, and slogan.

The 40-second films illustrate the use of Westinghouse appliances and demonstrate top sales points. There are five on refrigerators, four on ranges, two on the home freezer, and three each on water heaters, Laundromats, and clothes driers. One film is available on the Laundromat and Drier "twins."

R. A. Roxas, manager of the motion picture department of Westinghouse, at Pittsburgh, was technical adviser for the production and Miss Camille Beauchamp, assistant director of the Westinghouse Home Economics Institute, was technical adviser on food preparation. The playlets were produced by United Film Service, Inc., of Kansas City, Mo.

Westinghouse movie playlets are available through the following film distributors: United Film Service, Inc., Kansas City, Mo.; Alexander Film Co., Colorado Springs, Colo.; A. V. Canger Service, Inc., Independence, Mo.; Motion Picture Advertising Service Co., Inc., New Orleans; and Reid H. Ray Film Industries, Inc., St. Paul, Minn.

Servel Distributors' Trial Postponed to Sept. Term

PHILADELPHIA—Trial of the Philadelphia Gas Works Co. and Motor Parts Co. here on charges of setting higher prices in Philadelphia on Servel gas refrigerators than they did in adjacent markets has been postponed to the September term.

The postponement was made by Federal Judge George A. Welsh with the mutual consent of counsel. The attorneys both indicated that they needed more time to prepare their cases.

The two distributors have pleaded not guilty to the charge of conspiring to fix prices illegally.

Norling Heads G-E Dept.'s Retail Development Section

BRIDGEPORT, Conn.—E. H. Norling has been appointed manager of the retail development section of the General Electric Appliance & Merchandise Department, it has been announced by A. M. Sweeney, general sales manager.

Norling joined the company in 1927 in the advertising and sales promotion division of the refrigeration department. He subsequently was a kitchen specialist, war-time expediter, and sales manager of the sunlamp and heater section. He has been a member of the retail development section for several years.

In his retail development work before and during the war, Norling originated many dealer sales plans. He prepared the first retail sales training courses for refrigerator salesmen.

Flint Dealer's Full-Page Spread Called 'Ad of Year' by Suppliers; He Wins Praise 'Lying Down' (In Refrigerator's Super Freezer)

FLINT, Mich.—A striking, full page newspaper advertisement of a Norge 8.1-cu. ft. Super Freezer refrigerator won for Ace Furniture and Appliance Co. here congratulations and high praise from both his distributor and Norge factory officials, B. E. Goldman, head of the dealership, revealed recently.

Immediately after the advertisement appeared in the Flint Journal, Goldman received this telegram from C. A. Mauer, vice president of Radio Distributing Co., Norge distributor with headquarters in Detroit:

"Norge officials visiting here today extend their congratulations with ours for your June 11 advertisement. Acclaim it advertisement of the year. Thanks for tremendous cooperation and promotion of Norge in Flint."

In the "ad of the year," a drawing of the refrigerator—with door open—occupied nearly the entire page. The artist had drawn a frost covered Goldman lying on the full-width freezer shelf munching a sandwich.

Another store official was pictured resting in the dry storage bin at the bottom with his pointing fingers drawing attention to the fact that "\$1 down delivers" and "up to \$100 trade-in allowance for your old refrigerator."

Along the left hand edge of the advertisement, six product features were treated in separate small boxes.

Retail price of the unit shown in the advertisement was \$249.95.

Goldman credited the artwork and layout to a local advertising agency.

This unusual full-page advertisement, published recently by Ace Furniture and Appliance Co., in Flint, Mich., drew commendation from both the area distributor and Norge officials. They called it the "ad of the year."

Let "By" and "Kay" Help You Sell!

"By" and "Kay" Factor are ready to go to work for you!



- Sound construction
- Reliable operating mechanism
- Manufacturer's "know-how"
- Best insulation—FIBERGLAS*

*U. S. REG. U. S. PAT. OFF.

These 5-inch sales-minded characters are telling 33,000,000 readers of LIFE and BETTER HOMES & GARDENS what both men and women should look for in buying appliances.

Now, "By" and "Kay" are ready to stick to the sides or tops of appliances in your store—to remind buyers how to buy, and sellers how to sell—with Fiberglas* Insulation.

To get your supply of these sales aids, see your distributor or manufacturer's representative.

OWENS-CORNING FIBERGLAS CORPORATION
Dept. 107-F-26, Toledo 1, Ohio

OWENS-CORNING
FIBERGLAS
Appliance Insulation

*FIBERGLAS is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.



- Proper size
- Simple operation
- Ease of cleaning
- Ample working or storage space
- Best insulation—FIBERGLAS*

*U. S. REG. U. S. PAT. OFF.

"Kay's" base has a special adhesive that sticks to any dry surface.

"By's" base has a special adhesive that sticks to any dry surface.

FIBERGLAS IS IN YOUR LIFE...FOR GOOD!

G-E Devises Home Demonstration Plan To 'Educate' Laundry Equipment Buyer

BRIDGEPORT, Conn.—A program designed to help home laundry equipment retailers obtain more satisfied users has been prepared by the General Electric Co.

The program covers all aspects of post-sale demonstration in the home and will be used by the company's distributors as a guide in developing a staff of trained demonstrators to work for dealers in educating customers on the use of their new laundry equipment.

Titled the "Free Lance Home Demonstration Program," the plan suggests the procurement of demonstrators to work on a part-time or free-lance basis. It discusses selection and training of personnel, payment methods, successful use of the new home demonstrator, home call patterns, and other problems.

The program will work as follows: General Electric distributors will select and train prospective demonstrators in accordance with the needs of their territory.

When the women are fully qualified as demonstrators, they will assist a specified number of dealers. The dealer will be given the name of the demonstrator and will contact her as soon as he delivers a product, either for trial or after a sale. She, in turn, will contact the customer and arrange for an appointment.

At the conclusion of the visit and demonstration, the customer will be asked to sign a statement reporting that she understands the operation and care of her new appliance. The report will then be returned to the dealer to serve as a record of a successful demonstration and a potential file for new appliance sales prospects.

L. G. Hertzler, sales manager of G. E.'s home laundry equipment division, said that the benefits which can accrue from the new program are numerous. To both distributors and dealers, it will mean fewer service calls on equipment which the customer has abused through ignorance. It also means the availability of a large home service staff at nominal expense.

From the dealer's standpoint, it means extra salesmen who can get into a customer's home and be in a position to tell her what additional appliances are needed. The small dealer will be able to offer services

comparable to the large dealer. He will have a well trained person for special promotions, demonstration programs or clinics—yet he will pay her only when she is demonstrating.

The home-service woman will have pleasant employment with the opportunity to choose her own working hours at excellent remuneration.

"But above all," Hertzler said, "the program means more satisfied customers."

Coolerator Appoints Bison Buffalo Area Distributor

DULUTH, Minn.—Bison Electric Co., Inc., of Buffalo has been appointed distributor for the Coolerator line of refrigerators, home freezers, and electric ranges, it is announced by W. C. Conley, Jr., sales manager for Coolerator.

Bison Electric will wholesale the Coolerator line in western New York and northern Pennsylvania.

One of the oldest appliance distributing firms in the Buffalo territory, Bison Electric was founded in 1890 as the J. C. Stearns Equipment Co. In 1915, J. T. Arundell, who was vice president of Stearns, formed the present company and took over the Stearns operation. Arundell is still president of the firm.

Problem of Cooling Unique Military Inn Solved by 2 'Cut-Down' Packaged Units

By C. Dale Mericle

DEARBORN, Mich.—Andy Palmer's new Military Inn, an almost fabulous bar and night spot with such contrasting attractions as the "world's largest gun collection" numbering more than 5,000 items, hunting trophies, and a Dixieland band, has just been air conditioned by Maksym Refrigeration Engineers, distributor for Typhoon in the Detroit area.

Located at the extreme western edge of Detroit on heavily traveled route U. S. 24, Military Inn is a fort-like structure built largely from 90,000-odd bricks and 14-in. thick timbers that were salvaged from the old Detroit Arsenal buildings constructed way back in 1833.

The Inn measures nearly 40 ft. wide by 120 ft. long and consists of an entrance-way tower (complete with battlements), a foyer lined with 2,000 miniature liquor bottles (loaded), illuminated wall display panels filled with guns (not loaded), a tap room, and the night club area which includes dance floor, band stand, and mezzanine. And in addition to the guns in the cases, hundreds of rifles are suspended from the ceiling, while Gatling and more modern machine guns and cannon, along with trophies are positioned throughout.

Having a capacity of more than 300, Military Inn is usually filled to capacity, thronging with visitors who

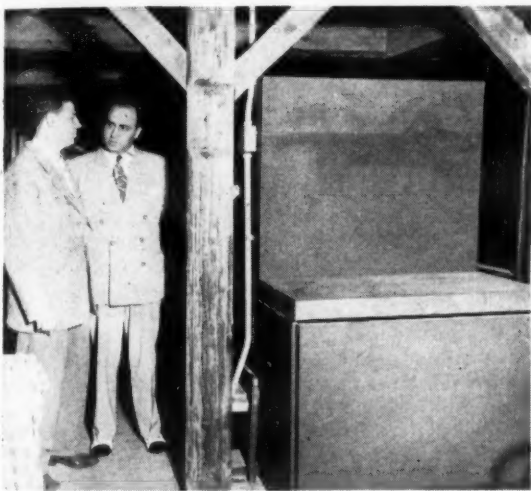
machines were mounted on special platforms erected over the open stairwells on each side of the balcony.

They're located at almost the end of each side of the balcony so most of the air is discharged forward. Some of it is directed sideways so that it may spill over onto the dance floor and provide some cooling for the lower floor.

Because the ceiling height was limited, and also to obtain better air distribution, the two 7½-ton machines were installed in two sections. Case of this size Typhoon unit normally measures 91½ in. high. The highside section of each unit, however, measuring 33 in. high, has been removed and located immediately behind the lowside compartment housing the coil, blower, and filters. Over-all height of the latter section is but 58 in.

Incidentally, the mottled brown finish of the cabinets blends nicely with the burnt wood decorative motif of the Inn, making the units relatively inconspicuous.

An evaporative condenser has been installed on the roof for the two units, being a Typhoon 15-ton job. Housing of the "evap" was made oversize so that another 5-ton coil may be installed in the future, according to Maksym, who said that Palmer is considering the addition of a 5-ton air conditioner for the lower floor area.



Because ceiling height of the balcony in Military Inn was so limited, it was necessary to place the high side section of each 7½-ton conditioner behind the low side compartment. Here M. G. Maksym (right), Typhoon distributor, explains the controls to Bill Palmer.

come many miles to inspect the guns collected by Palmer during the past 20 years and take in the early American Frontier atmosphere featured in the architecture.

This crowd, especially when the dance floor is well packed, imposes a considerable latent and sensible load on the two 7½-hp. Typhoon conditioners that were installed by the contracting firm, which is headed up by M. G. Maksym, president.

"Andy Palmer was primarily interested in cooling the balcony, not the lower floor area or bar, which is why the units were installed upstairs," Maksym explains.

Locating and installing the units was no simple problem, it was indicated. The heavy timber construction of the building and the suspended rifle displays virtually made ductwork impossible. So the

"Although the water supply here is good, it was necessary to install an evaporative condenser because sewage facilities are so limited," Maksym pointed out. "Palmer has a septic tank for regular sewage while plain waste water is piped to a drain field. If we discharged the units directly to the drain field, Palmer would soon have a small lake here."

City water is used for make-up purposes, and according to the contractor, head pressures on the conditioners have been running about 100 p.s.i.g., which is "lower than it would be with city water and increases the capacity of the units."

Two separate refrigerant circuits are provided in the "evap," one for each of the conditioners. This will make it possible to continue operating only one conditioner should a leak develop in the other system. Both conditioners cycle independently of each other, but the evaporative condenser is so wired that it cuts in whenever one of the units starts up. The latter are thermostatically controlled.

Condensate from one conditioner is piped into the sewer while the other machine discharges condensate into a convenient downspout outside the building.

To power the machines three-phase lines were brought to Military Inn by the utility from a point five blocks away.

At the present time Maksym is also installing a Betz Model 688HR half-round ceiling blower coil in the bottle beer storage room which will be tied in on a 1½-hp. Kelvinator compressor already in use. This installation will serve to pre-cool beer before it is taken to the four bottle boxes in the two service bars. There are two 4's, a 6, and an 8-ft. bottle box in the establishment.

"So much beer is sold on Saturday night and Tuesday night [when Frank Gillis and the Dixie Five are entertaining] that the bottle boxes can't handle the load," Maksym explains. "The new beer pre-cooler should take care of that problem."

Low Ceiling & Beams Made Job Difficult



The 7½-ton air conditioners on each side of the balcony blend inconspicuously with the unique American Frontier design of Military Inn. They are connected to an evaporative condenser on the roof.

Room Unit Rental Plan Offered In Long Island

LONG ISLAND CITY, N. Y.—Bon-Aire Conditioning Corp. here recently offered in a newspaper advertisement to rent 1950 model Fedders room air conditioners for offices and homes.

The Bon-Aire "unique" rental plan, according to the advertisement, provides for no capital outlay, tax deductible rental charges, low monthly rental fee, no service expense ever, and immediate installation.

The advertisement claims that Bon-Aire is the only air conditioning firm in the area to make this offer.

Miami Sportswear Store Expansion Includes Cooling

MIAMI, Fla. — Air conditioned throughout, expansion and renovation of the Royal Palm Sportswear Co. building, 2045 NW First Ave., has been completed, according to Ben Bloom, president.

Sales are Terrific!

dealers are emphatic!

about the new

Cool-a-Matic

the **Room Unit** with the Extra Cooling Capacity

Tecumseh Compressor and Silent-Knight Fan give

QUIET OPERATION

5-YEAR GUARANTEE

immediate delivery

Pick off volume at season peak with the Cooler that can be SHIPPED RIGHT NOW!

Dealers are enthusiastic! Orders are pouring in! The hotter the weather the better, because COOL-A-MATIC shows what its extra capacity means in dependable cooling. Actual tests prove that COOL-A-MATIC outperforms. The 5-YEAR GUARANTEE is added assurance of performance through summers to come. Don't limit your peak season volume... sell the cooler you can deliver NOW. Phone or mail coupon today.

- Blower can be operated independently for ventilating and exhaust.
- Large area evaporator coil permits comfort-level moisture control.
- FIBERGLAS filter removes dust, dirt, and pollen.
- No complicated wiring. No water connections. Just plug in.
- ½-ton unit delivers full 6,000 Btu.
- ¾-ton unit delivers full 9,000 Btu.

AUTOMATIC FIRING'S

Cool-a-Matic

PACKAGED

AIR CONDITIONER

• 3, 5 and 7½ ton capacities.

- Uses less water. Weighs ½ less.
- Smartly styled, smartly finished.
- Quiet operation.
- Motor cooled by own refrigerant.
- Over-size, double-inlet blower.
- Easy to install... no large water lines.
- Manufacturers one-year warranty.

Send in today

AUTOMATIC FIRING CORPORATION
4417 Oleatha, St. Louis 16, Mo.
Send me more details about

☐ COOL-A-MATIC ROOM UNIT
☐ COOL-A-MATIC PACKAGED AIR CONDITIONER
☐ AUTOMATIC FIRING FRANCHISE

Name.....
Firm.....
Street.....
City.....

Automatic Firing Corp.

4417 OLEATHA - ST. LOUIS 16, MISSOURI



ASSISTANT TO CHIEF INSPECTOR

Must be technically trained and experienced refrigeration engineer with thorough knowledge of machine shop inspection and compressor assembly, as well as complete sealed refrigeration systems. Prefer man 30 to 40 years. Salary commensurate with qualifications.

Box 3514, Air Conditioning & Refrigeration News

Survey Debunks Old Theory That Women Do 80% of Family Buying--It's Only 52%

CHAMPAIGN, Ill.—Do you believe that women do 80% of the family buying?

That statement is heard quite often, but it just isn't so.

At least that is what Paul D. Converse, professor of marketing at the University of Illinois and Merle Crawford, assistant in marketing at the same institution, learned from a survey they made a few years ago and published late last year.

On electrical appliances, for example, their survey showed that, on the average, women bought 41% of the appliances, men 37% and together they purchased 21%. Children were credited with the purchase of the other 1%.

But, you may ask, even if the women actually buy only 41% of the appliances, don't they influence the purchase of almost all of them?

Again, not so, they survey indicates. It found that women influenced the purchase of only 52%, while men influenced the purchase of 45% and children the remaining 3%.

Converse and Crawford started their survey by trying to run down that often quoted statement that women buy 80% of consumption goods. Where did it come from anyway?

Here is the story of what they found, in their own words:

"First, an executive of the National Retail Dry Goods Association knew of no such survey. Similarly a representative of the Advertising Bureau

of the American Newspaper Publishers Association knew of no scientific study which showed the over-all percentage of buying done by women.

"Finally the investigator decided to go direct to the publishing house which most often quoted the figure of 80%, namely, the *Ladies Home Journal* division of the Curtis Publishing Co.

"There it was finally established that the figure came from a chart clipped from the *New York Times* Magazine and that the chart carried a footnote indicating the Institute of Life Insurance as its source.

"The institute revealed that the figure came from a 1938 report put out by none other than the Curtis Publishing Co. Obviously, the investigator was riding quite a merry-go-round.

"However, still further investigation showed that Curtis quoted a book published in 1934 whose author took the information from a Conference on the Problems of Household Buyers held at the University of Chicago in 1927. Apparently such estimates are like family heirlooms, handed down from generation to generation."

Then, to find who really does the family buying and who influences it, the researchers decided to survey the students in their own marketing classes on who does and influences the buying in their own homes.

Converse and Crawford figured

Table 1—Actual Purchasing and Influence Exerted on Purchasing of 19 Commodities by Women, Men, and Children

Commodity	Percentages of Purchases Made By				Percentages of Purchases Influenced By		
	Women	Men	Together*	Children	Women	Men	Children
Men's suits and overcoats	4	74	21	1	27	70	3
Men's furnishings	27	63	8	2	29	68	3
Women's clothing	88	5	6	1	81	16	3
Boys' clothing	57	17	14	12	57	21	22
Girls' clothing	78	5	6	11	62	12	26
Men's toilet articles	23	72	3	2	17	81	2
Women's toilet articles	88	8	1	3	90	8	2
Drugs	55	35	8	2	56	41	3
Furniture	32	12	56	..	62	34	4
Draperies and curtains	89	2	9	..	83	13	4
Rugs and carpets	61	7	32	..	72	25	3
Electrical appliances	41	37	21	1	52	45	3
Kitchenware	83	10	6	1	85	13	2
Hardware	25	65	7	3	30	65	5
Automobiles	6	68	24	2	25	68	7
Gas and oil	11	79	4	6	11	84	5
Fuel	18	74	7	1	26	72	2
Jewelry	58	25	13	4	69	26	5
Groceries	67	20	8	5	66	26	8

*In most cases, women and men together; for children's clothing, parent and child together.

that these students would be sympathetic to the purpose of this survey and thus give more accurate answers than could be obtained outside. They also reasoned that the children would probably discern even more than the parents just who wielded the influence on the purchase of various items.

To get more representative results, they also engaged the cooperation of marketing students in the Universities of Alabama, Miami, Fla.,

Nebraska, New York, Pittsburgh, and Washington (state).

Inasmuch as college students were used to get the information, it obviously represented a higher proportion of middle and upper income families than would be found in the normal market, families of middle aged parents with at least one child, and a higher proportion of city dwellers.

In all, 1,225 students were asked to report on who purchased and who influenced the purchase of 19 different commodities. Table 1 gives the average percentage results.

For electrical appliances, the survey results were broken down further to show what percentage of the men, women, and children in four different income groups purchased what percentage of the appliances.

For instance in the highest income group (\$7,200 or more), 21% of the women bought no appliances, 24% bought a third or less, 26% bought from one third to two thirds, 18% bought from two thirds to 99%, and 10% bought all of the appliances.

The detailed results are in table 2. Converse and Crawford also broke the survey results down to show what percentage of appliances men and women purchased separately and together and on what percentage of purchases each exerted an influence. This is shown in tables 3 and 4.

Table 2—Percentages of Women, Men, and Children In Selected Income Groups, Reported as Purchasing Appliances

Income Group; Percentage Bought	W	M	T	C
\$7,200 or more	21	24	55	96
0	24	28	23	4
1-33	26	22	13	..
34-66	18	15	6	..
67-99	10	11	3	..
100	43	39	18	..
Average	38	36	25	1
\$4,200 to \$7,199	17	27	47	94
0	34	26	23	6
1-33	27	22	16	..
34-66	15	20	6	..
67-99	7	5	8	..
100	38	36	25	1
Average	36	35	26	3
\$2,500 to \$4,199	26	30	50	87
0	27	25	20	10
1-33	25	22	13	3
34-66	16	16	16	..
67-99	23	16	2	..
100	14	2	12	..
Average	44	28	26	2
Below \$2,500	22	30	39	81
0	25	36	32	19
1-33	16	16	16	..
34-66	23	16	2	..
67-99	14	2	12	..
100	44	28	26	2

Note: W, women; M, men; T, women and men together (includes parents and children); C, children.
*Less than 0.05 per cent.

Table 3

Percentage Bought	W	M	T	C
0	21	28	54	93
1-33	27	26	22	7
34-66	26	21	13	..
67-99	17	17	5	..
100	9	8	6	..
Average	41	37	21	1

Table 4

Percentage of Influence	W	M	C
0	4	9	80
1-33	20	27	19
34-66	45	42	1
67-99	25	18	..
100	6	4	..
Average	52	45	3

The researchers also compared the results obtained on this survey from Illinois students only with one taken by the University of Illinois on the same subject in 1931. It was found that as far as electric appliances were concerned, 41% of appliances were purchased by women, 37% by men, and 22% together in the 1931 survey. But in the 1949 survey, 31% of appliances were purchased by women, 47% by men, 21% together, and 1% by children.

Could it be that the man of the house has more than a little something to say about whether or not his wife gets a new refrigerator, range, or freezer?

ANY WAY YOU LOOK AT IT...
Kelvinator is the WATER COOLER
that has Everything!

LOOK AT THE FEATURES

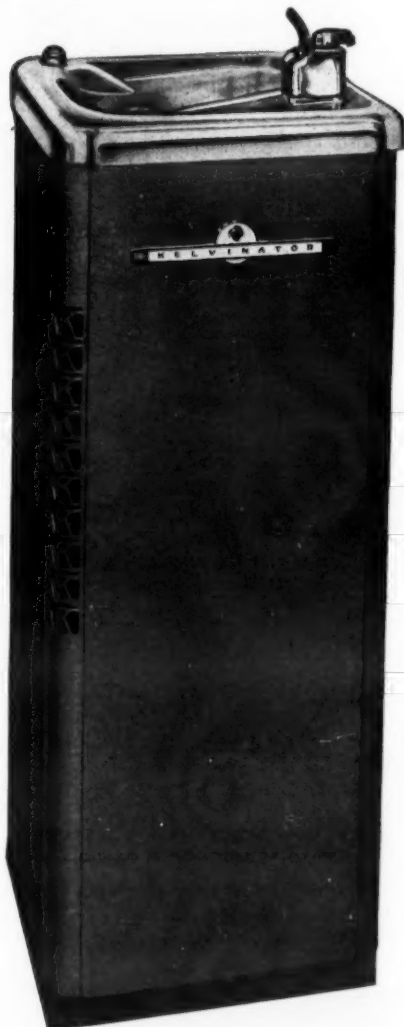
- Finest Office Cooler ever built
- Quietest Cooler ever built
- Handsomest Cooler ever built
- Beautiful to behold, works like magic
- Dependable as the day is long
- Famous Polarsphere sealed unit
- Mirror-finish stainless steel top, or gleaming white porcelain top—optional
- One-a-drink hand bubbler or Foot Pedal operated bubbler (slight extra)
- Five-year protection plan covers entire sealed cooling system
- Complies with U. S. Bureau of Standards—and many other exclusive features make KELVINATOR COOLERS Outstanding Buy

LOOK AT THE NAME

When you buy Kelvinator Water Coolers you have positive assurance of getting the most advanced design, the highest quality material and workmanship, and long lasting performance—as always—since 1914.

LOOK AT THE PRICE

Compare the price and you will find it costs no more to own the finest Water Cooler ever built—the Kelvinator Water Cooler. A Model for every cooler need. Write, phone or stop at your nearest KELVINATOR Distributor.

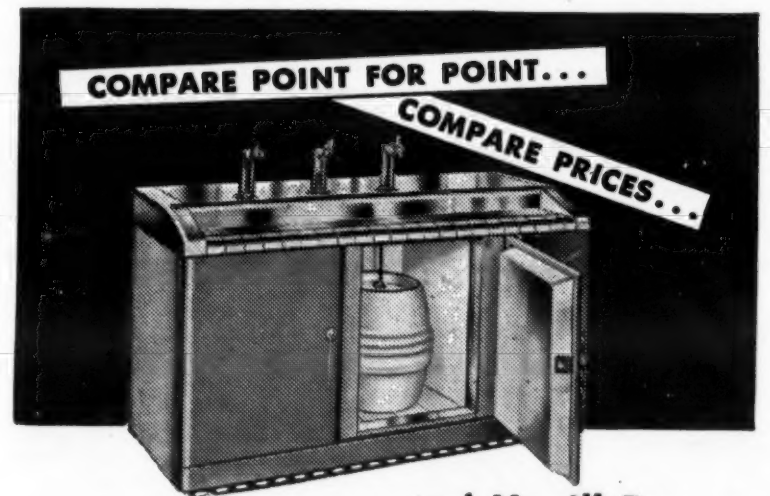


Kelvinator Model PE-5

Foot Pedal for all pressure Kelvinator Coolers at small extra cost

COMPARE POINT FOR POINT...

COMPARE PRICES...



...and You'll Buy a



Koolmaster
KEG COOLER & BEER DISPENSER

The stainless steel top of the Koolmaster contrasts most attractively with the soft brown Dulux long-wearing baked enamel body finish. Other Koolmaster features include:

- New all steel construction throughout.
- New chrome "push-button" door latches.
- "Engineered Cooling" (constant-even-temperature)
- New full length concealed door hinges.
- New five-year warranty plan.
- All stainless steel exterior (slightly higher price)

Two sizes, two-keg and three-keg sizes are designed with self-contained refrigerating units or for remote installation.

For Complete Information Write or Phone

UNITED REFRIGERATOR COMPANY
HUDSON, WISCONSIN

PROFIT TODAY...BUILD FOR TOMORROW WITH

Kelvinator

THE NAME THAT SELLS...THE NAME THAT SATISFIES!

TOWN AND LUCAS STS. COLUMBUS 8, OHIO

Shoppers Reveal What They Like, Dislike About Pre-Packaged, Self-Service Meats

CHICAGO—Most people who once purchase pre-packaged self-service meats (and most customers who see them do) continue to do so, but only 51% buy them regularly. However, 75% are satisfied.

These facts and other figures determined in a nationwide survey add up to "a challenge to provide for the American family meat buyer the finest self-service meat operations through thorough education on the advantages, consistent quality control, and better packaging techniques."

So Super Market Institute members were informed at their thirteenth annual meeting by B. C. Robbins, promotion supervisor of du Pont's Cellophane Division. He was reporting results of survey made by du Pont and the Charles L. Rumrill Co. of Rochester, N. Y. on the preferences of 3,419 family meat buyers in 11 cities.

72% BUY PRE-PACKAGED MEATS

"Of the 3,419 family meat buyers, 96% had seen or heard of pre-packaged meats," Robbins reported; "72.2% had bought pre-packaged meats, and 27.8% had not bought at the time. The variation between cities in the percentage of those who had bought . . . ranged from a low of 55% to a high of 83%."

"Of those who had bought (at least once), 51.1% buy regularly, 40.8% buy occasionally, 7.7% no longer buy, and 0.4% gave no answer. Of all the pre-packaged meat buyers interviewed, 65% had bought within the last week."

Robbins recalled that "one of the first reach-in self-service meat cases, if not the first, was introduced on Jan. 7, 1941, in an A & P super at Jamaica Plains, Mass. It was an old two-sided delicatessen case with no lights and sliding doors—which had to be removed the first morning because many women pinched their fingers. But customers liked the idea!"

"In fact, one dowager in a mink coat was seen sauntering through

the store on opening day with a packaged steak draped over her arm. She liked self-service!"

"A recent nationwide check of actual purchases showed that shoppers buy one third more pre-packaged meat items per person in self-service than in service operations, and more groceries, too."

"In this study we merely totaled shoppers' actual purchases; we did not interview them. . . ."

It was carried out in 11 cities: Chicago suburban, Cleveland, Hartford, Houston, Los Angeles, Miami, New York City, Omaha, Philadelphia, Rochester, and Salt Lake City.

"In each city, we surveyed two residential shopping centers, each with at least one good service meat operation and one good self-service meat operation that had been under way for at least six months," Robbins explained.

"In house-to-house interviews with the family meat buyer in the surrounding area, i.e., 10 blocks each way from the shopping center, we interviewed a total of 3,419 family meat buyers (an average of 300 plus for each city)."

HOUSEWIVES TELL WHY

Status:	Housewives	88%
	Others	12%
Age:	20-34	35%
	35-49	40%
	50 plus	25%
Class:	Middle income group	68%
	single homes	20%
	apartments	12%
	double houses	

"This survey, we believe, reflects accurately consumer meat preferences on a nationwide basis in view of the total number of interviews (which are accurate within 2½%), the individual stability of city results, and the geographical location."

"Many people gave more than one reason for buying or not buying; therefore, the reasons add up to more than 100% in some cases. These reasons show interesting behavior

patterns in this fascinating new, very new, development to which these meat buyers have recently been exposed in varying degree. Many frankly admitted they haven't had time to decide. Habit is strong. There are many 'die-hards' who need to be educated and convinced:

REASONS FOR FIRST PURCHASE

Regular store handled	36.5%
Convenience	23.2%
Appearance looked good	19.7%
Desire for something new	16.9%
Desired cuts and amounts	6.7%
Independent selection	5.3%
Could see meat	4.4%

"Other reasons included: 'Liked packaging,' 'cleanliness,' 'price.'"

"These are free answers, self-stated and spontaneous. The consumers were asked only, 'Why did you first purchase?' and were not given a list of reasons to check."

"Here are the reasons for no first purchase:

Preferred regular service store	49.9%
Doubt freshness	23.2%
Prefer butcher	14.4%
Don't like packaging	6.6%
General indifference	6.1%
Not enough variety	4.6%

"Other reasons included: 'Hard to inspect meat,' 'quality,' and 'price.' "It is interesting to note that two thirds of those not yet purchasing had some definite opinion, equally divided between unfavorable and favorable."

Of those 51.1% who buy regularly, they do so, Robbins said, because of:

Convenience	37.8%
Store influence	27.9%
Like packaging	10.0%
Good experience	9.8%
Can get variety	9.6%
Can see meat	8.0%

Other reasons: "good quality" 6.9%; "independent selection" 5.9%; "cleanliness;" "price;" and "freshness."

"Note," Robbins emphasized, "that all these reasons are positive. ('Store

influence' means that the store sold her on pre-packaged meats)."

"The 40.8% who buy 'occasionally' do so because of:

Service store influence	34.4%
Convenience—S. S. Meats	27.1%
Generally favorable	12.0%
Still like butcher	9.3%
Some dissatisfaction	9.3%
Like in emergency	8.9%

"Among the 'occasional buyers,' negatives have begun to appear which keep purchases down to some of the time. Some positives, like 'convenience,' 'in an emergency' bring about occasional purchases."

"By and large, the reasons for not buying more often are passive rather than negative and do not seem insurmountable," he pointed out.

WHY THEY DON'T BUY NOW

"And then there are the 7.7% who give reasons for no longer buying:

General dissatisfaction	36.6%
Prefer other stores	34.3%
Prefer butcher	30.3%
Poor quality	20.6%
Poor packaging	12.6%

"Other reasons included 'variety,' 'price,' etc."

"Perhaps a few typical statements are in order:

"Prefer other stores. 'Not sold in my store.' 'Have mine delivered.' "Prefer butcher. 'Like help from butcher.' 'My butcher accommodates me in every way.'"

"General dissatisfaction. 'Just don't like.' 'Not too well satisfied.'"

"Poor quality. 'Not too fresh.' 'Afraid to buy.'"

"Poor packaging. 'Can't see both sides.' 'There is hidden waste.'"

"Here definitely is helpful information of utmost importance. Shoppers are telling us why they've stopped buying."

"Now let us look at the opinions of all pre-packaged meat buyers as they compare self-service meats and service meats:

"21.3% believe pre-packaged meats not as good."

"31.9% believe them better."

"44.1% believe them the same."

"These figures need little comment; three out of four are satisfied."

"Now we come to a general summing up of likes and dislikes:

WHAT CURRENT BUYERS LIKE ABOUT PRE-PACKAGING

Convenience	71.5%
Independent selection	18.9%
Cleanliness	17.8%
Desired cuts and amounts	12.2%
Can see meat	9.5%
Packaging	8.6%
Appearance	7.2%
Freshness	4.5%

"Other reasons include 'quality,' 'price,' and 'generally favorable.' Typical comments were:

"Convenience. 'Saves time, no waiting, little shopping fatigue.'"

"Independent selection. 'Free to choose or walk away,' 'inexperienced shopper can look before buying,' 'no pressure.'"

"Cleanliness. 'More sanitary without handling,' 'no flies.'"

"Cuts and amounts. 'Better selection,' 'right amount,' 'choice of cuts.'"

"Can see. 'See what you're getting, price, and weight.'"

"Packaging. 'Easier to store,' 'ready wrapped,' 'well trimmed.'"

"Appearance. 'Looks goods,' 'looks tempting.'"

"But let us not kid ourselves—let's consider what faults they had to find:

WHAT CURRENT BUYERS DISLIKE ABOUT PRE-PACKAGING

Some phase of packaging	19.5%
Doubt freshness	18.7%
Can't get variety	17.1%
Can't inspect or see details	11.9%
Not as good quality	7.3%

"Other reasons given are 'price' and 'prefer butcher.' Typical comments were:

"Packaging. 'Fat and bone underneath, hidden waste, too many scraps in cold cuts, not trimmed, grade not stamped on package, not sure of weight, cardboard soaks up juices.'"

"Freshness. 'Not as fresh, don't know how long packaged.'"

"Variety. 'Can't get correct amount, poor selection, can't get desired thickness, must take meat as is.'"

"Can't inspect. 'Cardboard hides meat, can't see both sides, can't judge number of slices.'"

"Quality. 'Not as good, less flavor.'"

"And there is the other side of the picture—the serious side, the side to be watched, checked, and remedied," Robbins said.

HOW TO BEAT COMPETITION and make more money!

CASH
IN
WITH



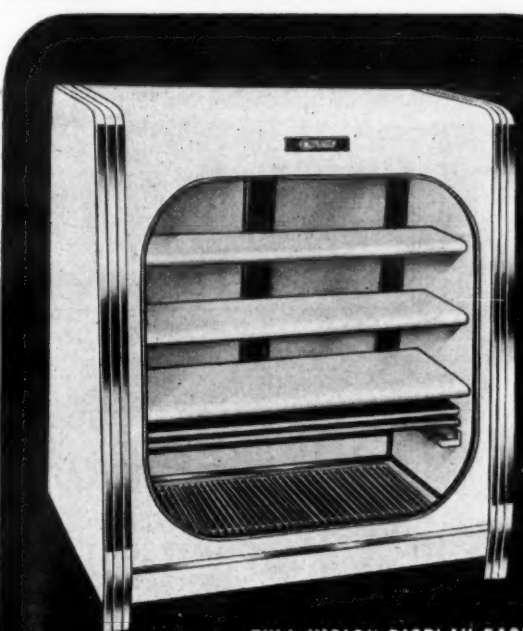
AMERICA'S No. 1
VALUE IN
FOOD MERCHANDISERS

The COLDIN Line of refrigerated display cabinets beats anything your competition can offer. Each and every case has all the features the retailer wants — at the price he wants to pay! Get wise . . . Get the selling advantages of COLDIN cabinets — the more-for-your-money features that clinch sales, turn prospects into buyers and buyers into friends.

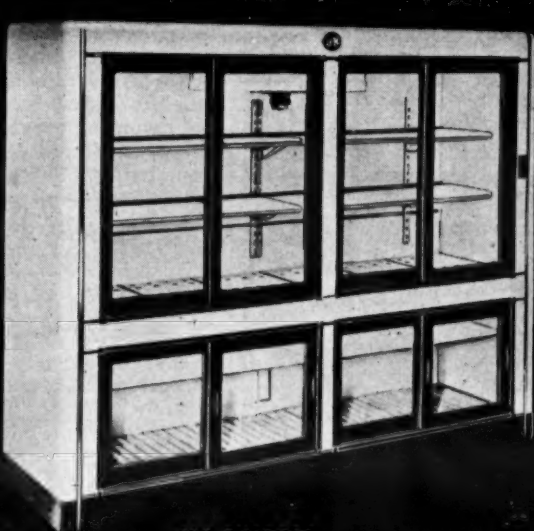
FREE

TO DEALERS

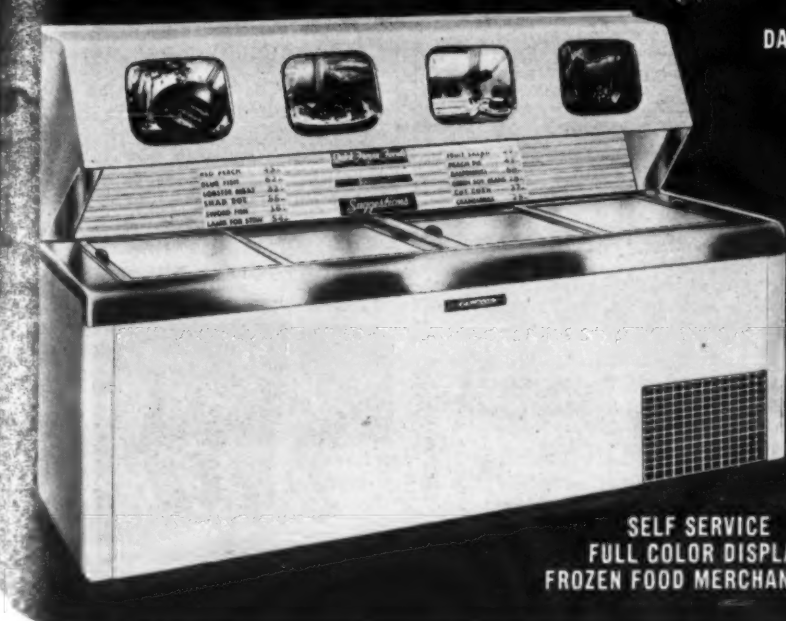
The COLDIN Line is ready, - ready to help you punch competition groggy - at your full, regular profit! You owe it to yourself to get the full story. Write for your free Coldin Catalog. Do it now!



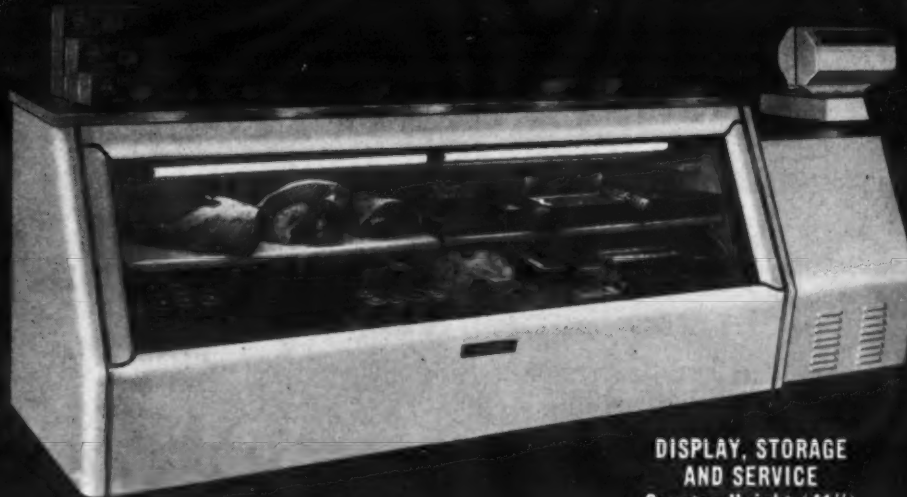
FULL VISION DISPLAY CASES
In Any Color or Stainless Steel
Also Available For Low
Temperature Display of
Ice Cream, Cake, Etc.



ALL PURPOSE
DAIRY & BEVERAGE
WALL CASES



SELF SERVICE
FULL COLOR DISPLAY
FROZEN FOOD MERCHANDISER



DISPLAY, STORAGE
AND SERVICE
Counter Height (41")
Formica Top - All Porcelain

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)

Verse of the Week

Typhoon Air Conditioning Co., Inc.
Brooklyn, N. Y.

Editor:

This doesn't constitute my weekly release, but is merely a quick note for your amusement and/or publication.

At long last Miss Irene Freeze, mentioned in previous letters, has left our employ. To replace her, we inserted an ad in the *New York Times*, which was to read as follows:

SWITCHBOARD-STENO-BKLYN small board, pleasant air-cond office Typhoon, 794 Union St. U1 7-8800. This is the way the ad appeared:

SWITCHBOARD-STENO-BKLYN small bed, pleasant air-cond office Typhoon, 794 Union St. U1 7-8800.

This event inspired Ira Rothfarb, our highly literate controller, to improve on Shakespeare's "As You Like It:"

Under the Greenwood tree
Who loves to lie with me
And turn her merry note
Unto the switchboard's throat
Come hither, come hither, come
hither

Here shall she see

No enemy

But comfort and cool weather.

PETER T. WOTTON

Editor's Note: Tell us about the replies you received from that "small bed" ad, Pete.

New Use for Freezers

A local woman tells us that knitters are now keeping nylon yarn in home freezers.

The sub-zero temperatures make the yarn more pliable and easier to work with and needle. There's one danger, she cautions: Don't get the mess of knitting confused with yesterday's spaghetti.

Baseball Notes

Sam Glass, advertising manager of Koch Refrigerators, is now a highly serious, dignified, responsible executive of one of the industry's oldest and most substantial manufacturing concerns. But in his younger days he was an actor, a baseball player, and engaged in many other interesting endeavors. And he still has his moments, as witness the following delightful letter:

Koch Refrigerators
Manufacturers of commercial
refrigerators since 1883
North Kansas City 16, Mo.

Editor:

A guy who played on my basketball team winter before last is a small-time infielder, after a fashion. Named Albert Rosen: and at the moment he is performing his chores for some outfit named the Cleveland Indians, playing, I believe, in the bush crew called the American League.

"Flip," or "Flop" as we called him, is a fair hand at hitting a long ball as evidenced by the fact that he has

bashed his 17th round-tripper already (wait 'till the chuckers find out what happens if they start throwing curves around the letters). The year Flip played with Kansas City, we had a Johnny-come-lately to the sport, named Jackie Phillips, playing at short, and a laddie named Dick Kryhoski playing the initial sack. This Phillips guy was such a horrid ss. (he averaged 2½ errors per game and fielded in the low .400's) that finally, in desperation, the manager (your Dick Bartell) shifted the weak-fielding Rosen to short and dispensed with the services of Phillips (Phillips is now playing first for Pittsburgh against hook-arms). Kryhoski, like Bartell (ugh) is now with your Tigers.

Which all goes to prove that if the Yankees don't dig up some ball players pretty soon for the local Blues, than we're going to have a rough summer hereabouts and I'm going to confine myself entirely to my own softball activities . . . and I'm older than Luke Appling.

Kaycee almost got Johnny Ostrowski for Wakefield a couple of weeks ago. Now I'm afraid we might get Wakefield, and I don't think I could stand it. Last summer we had Pat Seerey!

If there is any more important information that you require about the private goings-on of the American League of Baseball, you just let me know. I know a guy who played three seasons with Eau Claire in the Wisconsin State League . . . and I've heard that there's a guy here in town who took a spring-tryout with Joplin in the Kansas-Oklahoma-Missouri League.

Did I ever tell you that at the age of 19 I spent 13 days with Fre-

mont in Nebraska State League . . . that I was an outfielder and they made me a second-baseman? Since then I've been catching, mainly hell.

I got three hits in about 29 times at bat, one a bunt, one a hit that deflected off the pitcher's glove, and the third a hit-and-run single that dribbled past the second-baseman as he went over to cover second.

Koch is having a field supervisor's sales meeting. I'll take a picture at the dinner tonight and send it to you in a day or two . . . along with about 5,000 words or so on the Koch line.

You don't have to run the picture and the complete story on your front page, but if you'd like to be nice to a broken-down old ballplayer. . .

SAM GLASS

From Our Mailbag

Mueller Brass Co.
Port Huron, Mich.

Editor:

Attached is a news item concerning a very interesting part of our organization called the "Quarter Century Club." This group was organized in 1943 and has 177 active members who have been employees here for 25 years or over.

We feel that this is a very impressive record.

O. R. PAYTON

"By the time the year 1950 has ended, the roster of the Mueller Brass Co. Quarter-Century Club will list the names of 177 active members.

"F. L. Riffin, company president, tops the list of veteran employees with 46 years of service. F. J. Fleckenstein, superintendent of the polishing and plating department and president of the Quarter-Century Club, is next in line with 40 years of service.

"Then follow three veteran tool room employees, E. H. Krenke, with 36 years—Cecil E. Wise, with 35 years—William A. Laudeman, with 34 years—and C. A. 'Dad' Hill, engineering consultant and inventor of the now universally used copper solder-type fitting, with 34 years.

"Nine Quarter-Century Club members have recorded 33 years of service—fifteen 32 years—twenty 31 years—fifteen 30 years—eleven 29 years—twenty-three 28 years—thirty-four 27 years—twenty-three 26 years—and twenty-one 25 years.

"The club's active membership figure of 177 exceeds by 29 the total number of persons in employment at Mueller Brass Co. in 1920. One hundred forty-eight men and women were employed here that year. Sixty-five of these, or nearly 44%, are still actively employed here, each with 30 years or more of recorded service. Over 5,000 years of accumulated brass making knowledge is combined in the minds and hands of these 177 veteran employees. They are the men and women mostly responsible for the growth of the Mueller Brass Co. and for its high position in the brass and copper industry."

Wonderful record, say we.

Postscript

Contrast:

Five union men in Atlanta, Ga., recently were given the job of tearing down a 65-foot elevator tower and re-erecting it, to meet a complaint by Local 387 of the International Structural and Ornamental Iron Workers Union.

The steel pipe tower, to be used in lifting material for a new building, was put up first by non-union labor. A sub-contractor was paid \$130 for the job.

There was no estimate of the cost of tearing down and re-erecting the structure by the five union men, each of whom got \$2.25 per hour.

Selling Capsules

More advice to salesmen from the Electric Institute of Washington:

It is more pleasant to give advice than to ask for it, but far more profitable to ask for advice than to give it.

As long as the salesman asks the advice of his customers, they will enjoy talking to him, and the more advice they give the better they will like him.

It isn't hard to sell if you keep your selling geared in with human nature; with people, with the things they want, with the things to which they most readily respond.

Skilled Rebuttal

According to *The Congressional Record* the following exchange of punts took place between Crawford H. Greenewalt, president of E. I. du Pont de Nemours & Co., and Representative Emanuel Celler, chairman of the Subcommittee on Monopoly Power.

CHAIRMAN: Mr. Greenewalt, let us assume that a concern can grow, mushroom, balloon itself into billions of dollars worth of assets. At least, you will say that that is a matter for Congressional concern, would you not?

GREENEWALT: I would say no.

CHAIRMAN: Not at all?

GREENEWALT: No.

CHAIRMAN: Regardless of its size to which it is directing itself?

GREENEWALT: No.

CHAIRMAN: Even the redwood trees in California have a limit with respect to size have they not? Nature puts a limit on that size; they grow pretty tall and pretty broad.

GREENEWALT: Well, you might also say with respect to the redwoods, that they have reached the point of inefficiency.

CHAIRMAN: I wonder whether this is so. I am not a botanist, I cannot say.

GREENEWALT: Well, perhaps they were so high that they could not get nourishment through their roots.

CHAIRMAN: Does the rhinoceros reach a size beyond which he will not grow?

GREENEWALT: The dinosaur did.

CHAIRMAN: What is that?

GREENEWALT: The dinosaur did.

CHAIRMAN: We do not know much about that; that was in another age. We are in this age.

GREENEWALT: But the point is history has shown quite clearly that when any structure, whether it be animal, vegetable or mineral, gets beyond the point where it can operate efficiently it dies. . . .

Genuine Joe says . . .

"Send for this
FREE Bulletin"



Write for Catalog
MU-40 . . . Every repair
shop needs one. It
helps determine the
catalog number and
price of Wagner
Motor Parts.

Wagner Electric Corporation
6471 PLYMOUTH AVENUE, SAINT LOUIS 18, MO., U. S. A.

In the Spotlight:

WILSON
FREEZERS •

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COMMERCIAL
REFRIGERATION

Write, wire, or phone concerning
dealership Franchise Availabilities

WILSON REFRIGERATION, Inc.,
Smyrna, Del.

**MOTOR-BASE
ADAPTERS**

Reliable servicemen
try to carry all the
essential parts for
the job, motor
adapters are es-
sential.



½ to ½ hp.—101-D
½ to 1 hp.—102-C
1 to 3 hp.—103-C

SERVICEMEN SEE YOUR JOBBER

Motor Adapter Corporation
4730 JOY ROAD
DETROIT 4, MICHIGAN

With Every
ICE MAKER . . .

Use **Filtrine**
HIGH EFFICIENCY

**SAVE SERVICE —
remove TASTES, SOLIDS**

FILTRINE MANUFACTURING COMPANY
Brooklyn 5 New York

BUILD A FIRM BASE FOR PROFITS with KELVINATOR!

Sell Kelvinator—and watch sales go up on the soundest foundation of all . . . customer-satisfaction! You'll find that prospective buyers already know Kelvinator means time-proved dependability. You'll find that visible Kelvinator extra-quality clinches sales on the spot. And that the performance of Kelvinator items wins repeat customers as

a matter of course. See the complete range of parts and supplies to fit your needs . . . competitively priced . . . at your nearest Kelvinator depot. Write, phone, or stop in for helpful information on installation or service problems. Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Michigan.

Kelvinator Stainless Steel Evaporators

Kelvinator Silica
Gel Driers

Kelvinator Open Type
Condensing Units (¼
H.P. to 5 H.P.)

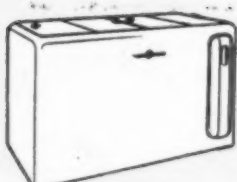
Kelvinator Compressors
(1/6 H.P. to 5 H.P.)

Kelvinator Sealed Type Condensing
Units (¼ H.P. to ½ H.P.)

PROFIT TODAY...BUILD FOR TOMORROW WITH

Kelvinator

THE NAME THAT SELLS...THE NAME THAT SATISFIES!



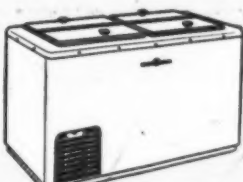
KELVINATOR
BEVERAGE COOLER



KELVINATOR FROZEN
FOOD MERCHANDISER



KELVINATOR
WATER COOLER



KELVINATOR ICE
CREAM CABINETS



KELVINATOR
AIR DRIER

NRDGA Survey of Appliance Sales and Expenses

Merchandising Data	1949	1948
Cumulative markon, per cent	34.6	35.1
Markdowns at retail, per cent of sales	6.7	4.7
Stock shortage at retail, per cent of sales	1.1	.7
Workroom net cost, per cent of sales of parent dept.	4.0	3.2
Cash discounts, per cent of sales	.3	.2
Gross margin, per cent of sales, including discount	25.4	28.7
Sales Data		
Sales per cent of last year	78.0	95.0
Sales per cent of total store	2.6	3.3
Number of transactions, per cent of last year	86.0	94.0
Average gross sales for year, dollar	116.81	132.53
Number of transactions per sq. ft. of selling space	1.0	2.0
Dollar sales per sq. ft. of selling space	103.0	146.0
Returns, per cent of gross sales	10.7	10.6
Selling area, per cent of total store	1.6	1.7
Number of transactions per sales person	596.0	766.0
Inventory Data		
Number of stockturns	4.1	4.3
Average inventory, per cent of last year	80.0	147.0
Stock age, per cent 0 to 6 months	80.0	80.0
Expense Data		
Newspaper costs, per cent of sales	2.0	1.6
Sales persons' salaries, per cent of sales	6.5	5.9
Delivery expense, per cent of sales	2.6	2.1

Department Store Major Appliance Sales Dropped 22% In 1949 as Costs Went Up

NEW YORK CITY—Large department stores sold 22% fewer major appliances last year than in 1948, took smaller gross margins, and spent more to make the sales.

This was revealed in a study of departmental merchandising and operating results compiled recently by the controller's congress of the National Retail Dry Goods Association. It covered department stores with annual volumes of more than \$1,000,000.

Figures given in the study are not averages but medians (halfway between highest and lowest) and are thus considered to be more typical of actual store results.

Not only were major appliance sales down sharply, but they accounted for a smaller percentage of total store sales, the study showed. They amounted to only 2.6% of store sales in 1949 as compared with 3.3% in 1948.

Number of transactions dropped 14% while the number of transactions per sales person fell from 766 to 596. Average gross sale was

\$116.81 compared with \$132.53 in 1948. Sales per sq. ft. of selling space in 1949 were \$103 and in 1948 \$146.

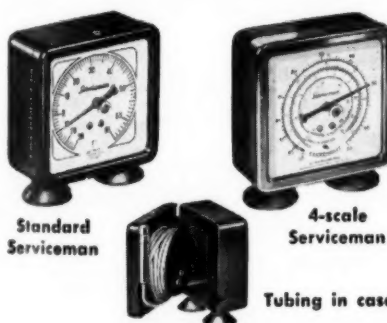
The stores got a cumulative markon of 34.6% in 1949 as compared with 35.1% in 1948. But after markdowns, stock shortages, workroom costs, and cash discounts, gross margin amounted to only 25.4% of sales, including discount. Gross margin was 28.7% of sales in 1948.

Expenses all along the line were on the upgrade. Newspaper advertising costs were 2% of sales as compared with 1.6% in 1948. Compensation for sales persons was 6.5% of sales as against 5.9% in 1948. Delivery expense was 2.6% of sales as compared with 2.1% the preceding year.

Only in the matter of inventory did the situation look better than in 1948. The average inventory was only 80% of 1948 where the 1948 inventory was 147% of 1947. Stock turns were about the same being 4.1 in 1949 and 4.3 in 1948. Eighty per cent of the stock was still less than six months old.

Know the "Serviceman" line of testing equipment

1 The "Serviceman" Testing Thermometers



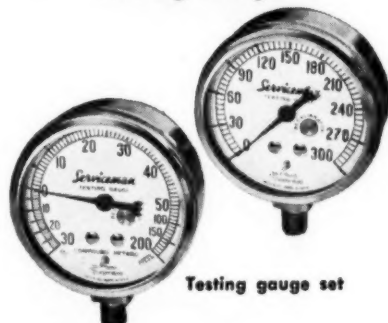
Thousands of these Serviceman dial thermometers in use prove they're the best ever. You simply pull out the five foot length of armored tubing from the back of the case (see cut), then run the bulb to the point of measurement. Readings are made as they should be: with door closed.

The standard type (available in ranges of -10° F. to +100° F. or -30° F. to +65° F.) is shown above; also the new four-scale type available in the same temperature ranges. Four-scale type has pressure-equivalent scales for Freon, sulphur dioxide and methyl chloride, each scale in a separate color. The exclusive Marsh Recalibrator enables you to keep these instruments on the beam all times.

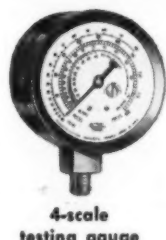
And don't overlook that handy little pocket thermometer, opposite page, highly accurate; easy to read; furnished with swivel clip to hang it in refrigerator or clip it in your pocket.



2 The "Serviceman" Testing Gauges



Something new, something far better... that is the story of these extremely accurate testing gauges. They are dressed in handsome polished brass cases with glass crystal and knurled screwed ring which gives quick access to the "Recalibrator" to keep them always accurate. Retard scale on 30" x 200 lb. compound gauge gives close reading in important testing range. Both the compound and the 0-300 lb. pressure gauge have knife edge pointers for use on manifolds and other testing operations. Note also the four-scale corresponding temperature gauge, opposite, with three extra color-differentiated scales covering sulphur dioxide, methyl chloride and Freon. Made in ranges for all requirements. All testing gauges have 2 1/2" dials.



See your jobber about Marsh Testing Instruments, or write for facts.

MARSH INSTRUMENT CO. Sales affiliate of Jas. P. Marsh Corp., Dept. D, Skokie, Ill.

MARSH Refrigeration Instruments

Frost Fire Sale Flourishes As Firemen Watch For Flames

BROOKLYN—While firemen were still patrolling his flame-gutted appliance store at Myrtle Ave. and Pearl St. here recently, Frank Perloff, president of Frost Refrigeration, Inc., set up a sales room in the warehouse next door and started selling salvaged appliances.

The fire started at 4 a.m. and caused an estimated \$150,000 damage. Perloff said that every employee, on his own initiative, pitched in and helped remove salvagable stock to the warehouse, which was not affected by the fire.

By 10 a.m. Perloff had set up a makeshift display room and was making his first sale of the day. Firemen kept watch over the thoroughly destroyed building until 3 p.m.

Quickly capitalizing on the tragedy, Frost told about the fire in its evening television and radio commercials. The next day, Saturday, salesmen were decked out in red "Firefighter" hats and a fire sale moved a good deal of the salvaged goods at bargain prices.

Perloff said the store was completely covered by insurance.

Cool Warehouse Offices

JACKSONVILLE, Fla.—John E. Price will erect a new building for the warehouse division of Standard Brands. It will cost \$50,000, and the offices will be air conditioned.

Hatchet Buried!

Ice Co. Says Mechanical Refrigeration Is 'Must'

GAINESVILLE, Ga.—Under a policy of "rendering complete service to the customer," City Ice Co. here has announced that it will handle a full line of Kelvinator home refrigerators, home freezers, and other major appliances.

The unusual announcement was made by Conrad Romberg, one of the firm's executives, who points out that mechanical refrigeration, as well as ice refrigeration, is a definite "must" in the community. Retail sales of home appliances, Romberg indicated, will round out fully many types of refrigerated service which the firm provides.

Currently, City Ice Co. maintains one of the largest commercial community refrigeration centers in Georgia, with a freezing capacity of approximately 40,000 lbs. of chicken daily, and with more than 1,000 private cold storage lockers.

Hope May Do 4 More TV Shows for Frigidaire

NEW YORK CITY—Comedian Bob Hope, who has conducted two big holiday shows for Frigidaire over television, may do four more such shows before the end of the year for Frigidaire, it was reported here recently.

This was indicated at the time Hope was released from his radio contract with Lever Bros. and signed up with National Broadcasting Co.

Dishwasher Volume Gains 420%, Freezers 260% In Knoxville In April

KNOXVILLE, Tenn.—April sales of six major appliances by Knoxville dealers were well above those of March, while one—water heaters—failed to meet its March volume, reports issued by the Knoxville Utilities Board revealed recently.

For the three months, February, March, and April, sales of all seven appliances were far ahead of those for the same period last year, which was admittedly poor.

For the three months period, dishwashers made the most outstanding gains with a rise of 420% in volume. Home freezer sales were up 260%, refrigerators 147%, ranges 96%, washing machines and ironers 67%, and water heaters 7%.

Home freezers sales for April were 191% ahead of March. Dishwashers moved 67% faster, refrigerators and washing machines 22%, ranges 8%, and ironers 5%. Water heaters were down 10%.

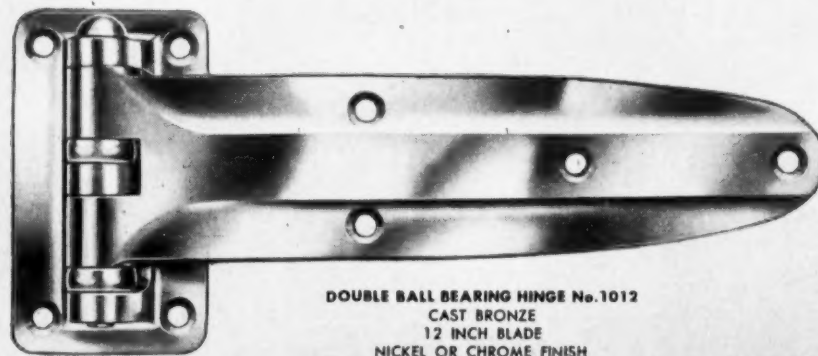
April sales, compiled from 29 dealers, were as follows:

Knoxville April Sales

	No. of Units	Value
Home Freezers	35	\$ 11,409
Refrigerators	715	164,611
Ranges	353	84,053
Water Heaters	58	7,876
Dishwashers	10	2,540
Washing Machines	436	61,692
Ironers	19	3,552



UNIVERSAL COOLER LOCK No. 2-325
CAST BRONZE
NICKEL OR CHROME FINISH
WEIGHT—11 POUNDS



DOUBLE BALL BEARING HINGE No. 1012
CAST BRONZE
12 INCH BLADE
NICKEL OR CHROME FINISH
WEIGHT—7 POUNDS PER PAIR

A full range of sizes for all needs

GOOD HARDWARE

... ruggedly made for smooth, positive operation and long trouble-free life.

Write for Catalog

ARCADE

MANUFACTURING DIVISION
ROCKWELL MANUFACTURING COMPANY
FREEPORT, ILLINOIS



EI 'Beat the Heat' Room Cooler Drive To Run Through July

WASHINGTON, D. C.—A full-scale promotion campaign to stimulate the sale of room air conditioners was conducted by the Electric Institute of Washington here this spring.

It opened with two 900-line Potomac Electric Power Co. advertisements in each of the local newspapers, and follow-up insertions in all three papers.

A total of 225,000 bill inserts were mailed to the utility company's customers during April. These folders played up the theme of "It's So Easy to Beat the Heat with These New Electric Room Conditioners."

Room coolers were placed on exhibit in the Institute's display floor in the Potomac Electric Power Co. building at 10th and E Sts. in April and will continue through July. In addition, the windows of the building will be exclusively devoted to room coolers in June.

A 900-line advertisement was placed in all county newspapers during April and May, reaching a circulation of about 50,000.

Radio spot announcements are being carried over WTOP during Elinor Lee's "Home Service Daily" program in June. The institute's weekly program over WOIC-TV will feature room coolers during June.

Expenses for the above-mentioned portions of the program are being borne entirely by the Electric Institute.



This photo is part of an insert being sent to electric power users in the Pepco area.

tute. But air conditioning distributors throughout the area are sharing expenses on additional radio broadcasts. These include radio spot announcements over WTOP 13 weeks on Claude Mahoney's program "Once Over Lightly" from 7:30 to 7:45 a.m. on Tuesday, Thursday, and Saturday. Supplementary are radio spot announcements over WRC which started June 19 for four weeks on the newscast 9:00 to 9:05 on Monday, Wednesday, and Friday.

The institute is also distributing gratis to air conditioning distributors in its area pamphlets explaining the benefits of food freezers.

BALANCING SYSTEMS: Testing Duct Outlets Will Show If Air Is Evenly Distributed

KANSAS CITY, Mo.—"Balancing" an air conditioning system means different things to different people," L. R. Phillips, director of research for Anemostat Corp., declared before the 37th spring meeting of the American Society of Refrigerating Engineers here.

"To the contractor, balancing means adjusting the dampers to meet the design conditions of the system. To the engineer it means subjecting the system to as many tests as possible. To the owner balancing is given as the excuse for juggling with the system to make it work," Phillips said.

Balancing of the system actually begins at the engineer's drafting board, for experience has shown that it is advisable to have dampers at branch ducts and volume control at each outlet, he indicated.

Considerable information and knowledge must be possessed by the engineer or contractor who is balancing air conditioning systems, according to Phillips.

"He should know the capacity of the system branches, main ducts, and outlets, and have data on fans and coils. Information on fan laws should be on hand because it is often necessary to increase fan speed. The manufacturer's fan curves should be available.

"His knowledge of airflow through ducts will involve data on static and kinetic pressure; losses due to friction in ducts, losses through air outlets, which varies with the type of outlet.

"The engineer should have some

knowledge of the physiological aspects of air conditioning. He must know what conditions might give sensations of drafts, for example.

"In recent years there have been great improvements in instruments to measure air. Draft gauges, pitot tubes, and anemometers are employed for measurement of air movement and pressure. In the measurement of air," Phillips cautioned, "it is important to know the directional characteristics of the instruments being used. There is much variation here, especially in turbulent air."

"Little work has been done on radial discharge from plaques and turbulent discharge from aspirating outlets. There is now available, however, a thermal anemometer designed to measure turbulent discharge. It depends on the cooling effect of turbulent air and resolves it into equivalent motion of straight air."

To outline the basic problem of balancing, Phillips first considered the simpler system involving just one duct with several outlets.

"First, open all the outlets to see if the system is up to design in air delivery. Second, test the air delivery at all the outlets to find the least favored outlet. If the latter is up to design then the other outlets are dampered down until they meet the design conditions."

(It was later pointed out to Phillips that varying the other outlets would in turn change the least-favored outlet, and he agreed that it would have to be rechecked then.)

"If the first test indicated the whole system was down in air delivery or the least-favored outlet was down, then the fan would have to be speeded up. Before this is done," he suggested, "all the dampers should be adjusted to the proper ratio."

"In the larger complicated systems, after all the dampers are opened, the least-favored branch is balanced, then the other branches are balanced, and finally the outlets in each branch.

"Although we have stressed the air distribution end of balancing, it is often necessary to test other components of the air conditioning system, such as the compressor, motors, water temperature, etc. Economics, however, don't usually allow for complete testing of the

entire system so the emphasis is usually on balancing the air distribution," Phillips said.

Prepared discussion on Phillips' talk included comments by James L. Wolff of the Charles Leopold organization as read by George Iwashita. To Wolff, "the pitot tube and the draft gauge are the most dependable of test instruments. A series of holes for pitot tubes in air conditioning systems wherever possible should be recognized as the hallmark of the attempt to obtain a successful installation."

"Complete testing and balancing involves more than adjusting dampers," pointed out H. J. Preben son. "If the owner has had a thorough explanation of the problems involved, the contractor will have fewer complaints from the customer."

Questioned as to the effect of the return air system on the air supply system and whether dampers might not be necessary there also, Phillips replied that "while the return air system is not so critical as air supply, it is desirable to regulate return air and have dampers at branch take-offs in return air systems. The location of return air inlets is important, although architects don't pay much attention to it."

Milwaukee School Outlines Training Need for Ratings

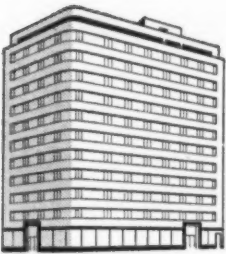
MILWAUKEE—Of interest to refrigeration, air conditioning, and heating men is a 110-page catalog issued by the Milwaukee School of Engineering, 1020 N. Broadway here.

The catalog lists occupational objectives and educational programs and describes laboratory and classroom training necessary to achieve various service and technician levels.

An occupational certificate of "Refrigeration Serviceman" can be earned in six months of study, according to the catalog. Six additional months comprise training for a "Refrigeration-Heating Serviceman." A technician's certificate is awarded in "Refrigeration, Heating, and Air Conditioning" at the completion of 12 additional months.



How they air conditioned the Kaymount Building ...without the use of tin snips!



The new Kaymount Building, corner of Vermont and K Street in Washington, D. C., is everything a modern office building should be.

Its streamlined exterior is matched by an interior carefully planned to make every inch of space useful and profitable. So when it came to putting in the air conditioning, the Kaymount builders threw away their tin snips and any notions of cluttering the building with ductwork. They selected a system as modern and efficient as the building design itself... usAIRco Modu-aire, the ductless way to air condition multi-room buildings.

Equally valuable in a 4-room school or a 1000-room hotel,

Modu-aire offers individual room units combining blowers, coils and filters. Cooling or heating is piped to each unit from a central system through small copper tubing. The desired temperature and humidity is mixed and controlled in each room by the tenant.

usAIRco Modu-aire is an air conditioning system you can specify for new or existing buildings. It eliminates the high cost and space-hogging wastefulness of ductwork. Modu-aire units are made in recessed or free standing models. It offers luxury year around air conditioning, at surprisingly low cost. Better investigate all the exclusive features of usAIRco Modu-aire...

... wire or write United States Air Conditioning Corporation, Minneapolis 14, Minnesota.

INDIVIDUAL ROOM CONTROL

MODU-aire

multi-room system for heating and cooling...

WITHOUT DUCTS!

usAIRco

Engineers and manufacturers of air conditioning, refrigeration,

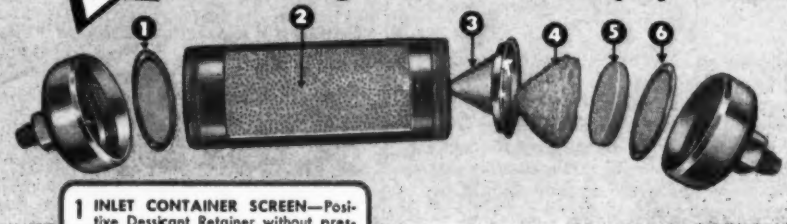
unit heaters, coils and ventilating equipment

THE Streamline DELUXE DRIER

"CLEANS AS IT DRIES"

A REFRIGERATION SYSTEM!

6... "IN-LINE" Cleaners Safeguard Vital Working Parts of The Equipment!



- 1 INLET CONTAINER SCREEN—Positive Desiccant Retainer without pressure drop.
- 2 DRYING AGENT—Installed under strict laboratory control with sealed charging equipment.
- 3 LOCKED-IN CONE OUTLET SCREEN—Extra Capacity free flow strainer surface.
- 4 FILTER BED—Chemically cleaned wool mass traps fine metallic grit and sludge.
- 5 WHITE WOOL DISC—Doubles filtering capacity.
- 6 OUTLET RETAINER SCREEN—By itself, equal to the filter elements in most ordinary driers.

For over 10 years the STREAMLINE Deluxe Drier has proved its ability to thoroughly clean and dry a refrigeration system. This "Double-Duty" Drier, with its unique cone screen filtering unit, is designed to remove metallic filings, lint, sludge and grit as well as doing a "one pass" job of removing all harmful moisture. Forged brass ends are threaded and soldered to the heavy copper shell for extra strength and safety.

Packaged in individual and multiple cartons for double protection of your investment. Keeps parts clean and safe from damage from the factory to the job.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

ORDER A CARTON TODAY
from your refrigeration wholesaler

'Ripe' Texans Waiting for Harvest**Freezer Dealer Finds 30-Day Trial Scheme Successful, Expects To Sell 7 Out of 10**

AUSTIN, Tex.—The Central Texas area was described recently as being "ripe" for the sale of home freezers.

W. W. Gates, appliance sales manager of the Calcasieu Lumber Co. here, whose department handles both International Harvester and General Electric home freezers, said: "We have found a lot of interest in home freezers in this area," Gates said, "but we are not going to get many people to buy freezers until other firms start promoting them."

Gates pointed to a "freezer forum" his firm sponsored this spring together with the International Harvester Co. as an example of the potential freezer sales that can be made in the area.

As a result of the two-session forum, nine sales were made within a week, two of them during the sessions themselves. A third was made to the winner of a 20-lb., forty-item food package attendance prize who was given a freezer on a 30-day trial basis in order that he would have a place to keep his prize.

In addition he said that as a result of the forum about 30 freezers have been placed to date on 30-day home trials—with the list of 250 prospects who attended the sessions being yet a long ways off from being completely canvassed by his salesmen.

"We estimate that we will sell seven out of every 10 freezers that we place," Gates said, adding this has been the average in the past in such home-placement sales.

As to what type of freezers people buy, Gates said that as a rule the 11-cu. ft. units sell best in urban areas with the 15-cu. ft. units selling best in rural areas.

"We always try to get people to buy the larger sizes," he said, "because we have found that many people return the smaller sizes on

trade in after they have had them for some time."

Queried as to whether aggressive promotion campaigns by other dealers would hurt his business, Gates said "no" and that in fact it would stimulate it.

He figured that his firm averaged 25% of the freezer sales made in the area with its present promotion policies and that if an over-all sales promotion campaign was undertaken by other dealers, the average would be kept up and that consequently many more sales would be made by his own personnel.

He indicated he would be more than willing to cooperate in such a campaign but that he had no plans at present to actively promote it, pointing out that the absence of an appliance dealers association in the area would make the task too troublesome to offer much chance of success.

In addition to the forum and school type of promotion, Gates termed the door-to-door canvassing of a two-man team with a truck and a freezer trying to make 30-day trial placements as the next best promotion stunt tried by his firm.

He pointed out that during the week of April 10 to 15 the two-man team averaged a freezer placement a day.

New 1950 Temprite Line Announced, Old Models To Be Kept In Line

DETROIT—Announcement of a completely new line of carbonator and cooler carbonator assemblies was recently made by Temprite Products Corp. here.

The 1950 Temprite line features a newly designed and improved pump, motor and relay assembly, and incorporates other improvements in functional parts of the basic carbonator.

The vane type, direct connected pump on the 1950 Temprite models is self-lubricating and has a built-in by-pass pressure relief valve. These features, according to Temprite, eliminate the danger of a "burned out" pump in case of temporary water supply failure and reduce to a minimum the maintenance required. The new relay assembly used was developed especially for long, trouble-free carbonator operation using a high-tensile, rustless alloy on the contact arms.

The company states that all former carbonator styles have been retained including the plain carbonators, cooler-carbonators, and packaged carbonator units. The design of the pump assembly and relay controls permits installation remote from the carbonator when desirable.

A new schedule of model numbers and list prices was simultaneously announced with the introduction of the new line. Copies of their latest carbonator catalog, Form No. T-315 are available from Temprite Products Corp., on request.

Max Myers Is Manager Of Domestic Sales For Reco Products Div.

PHILADELPHIA—Reco Products Div. of Refrigeration Engineering Corp., here, has announced the appointment of Max A. Myers as sales manager for all domestic sales.



Max A. Myers

Myers will concentrate his activities initially in setting up a nationwide distribution system for the company's new "Frosti-Stik" freezers for manufacturing frozen confections, and in distribution of Reco-Fab "Frosti-Vaults."

Myers was, from 1942 until April of this year, district manager for Uniflow Mfg. Co. where he helped direct and formulate merchandising programs and policies. Prior to joining Uniflow, Myers was general manager of the Refrigeration Div. of Trilling and Montague, Philadelphia distributing firm. Myers still retains his position as a Director of Kold Draft, Inc., of Chicago.

Houma, La. York Dealer Named

HOUMA, La.—Gulf York, Inc., of New Orleans, exclusive distributor for Gulf York products, has announced the appointment of Houma Electrical Appliance Co. as exclusive York dealer in Terrebonne and LaFourche parishes,



Boy! What a Market!
DEALERS! write Today for Literature
MARVEL Specialized REFRIGERATOR

Here's a handsome, efficient, Tecumseh equipped 4-foot box that opens new, profitable markets—multiple installations in apartments, cottages, resorts—sales where a small, compact unit is needed, such as doctors' offices, recreation rooms, executives' offices. Retail of \$149.95. Write, wire, or phone Sturgis 799.

Dependable Refrigeration Since 1937

MARVEL INDUSTRIES, INC., Sturgis, Mich.

Bundyweld...right at home in better refrigeration

And right into most home freezers and refrigerators, too, because manufacturers know Bundyweld has more refrigeration advantages than any other tubing.

Here's why.

Bundyweld has a perfect, patented construction—double-walled, copper-bonded throughout—for extra strength and sturdiness. You'll find it stands up under vibrations, jolts and strain in compressor lines, condenser and evaporator coils.

Ductile as well as lightweight, Bundyweld bends easily and quickly to short radius turns—with no fear of buckling. It's leakproof, too—its tight, copper-bonded walls test-proved by halogen vapor detectors.

Even Bundyweld's fabrication is right for refrigeration manufacturers. It's shipped to you in serpentine coils, complete and ready for assembly. The coils are bent on a wide range of centers and leg lengths, and are supplied in all commonly used tubing diameters. The bending machines are patented, another exclusive for you behind this miracle tubing of industry.

It all adds up to better performance, lower cost, less rejects and higher production with Bundyweld in your product. Get on the right track today; contact a listed distributor, or write: Bundy Tubing Company, Detroit 14, Michigan.

Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

WHY BUNDYWELD IS BETTER TUBING

Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's...



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Bonding metal fuses with basic metal, presto—



Bundyweld... double-walled and brazed through 360° of wall contact.



SIZES UP TO 3/4" O.D.

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hastings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Pelton-Deakins Co., 823-824 Chattanooga Bank Bldg. • Chicago 32, Ill.: Lapham-Hickey Co., 3333 W. 47th Place • Elizabeth, New Jersey: A. B. Murray Co., Inc., Post Office Box 476 • Philadelphia 3, Penn.: Rutan & Co., 404 Architects Bldg. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 3628 E. Marginal Way • Toronto 5, Ontario, Canada: Alloy Metal Sales, Ltd., 881 Bay St. • Bundyweld nickel and Monel tubing is sold by distributors of nickel and nickel alloys in principal cities.

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- DRY-EX WATER CHILLERS
- HI-PEAK WATER COOLERS
- FREON SHELL AND COIL CONDENSERS
- HEAT EXCHANGERS OIL SEPARATORS
- INDUCED DRAFT COOLING TOWERS*
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- BLO-COLD INDUSTRIAL UNIT COOLERS
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*A new Acme product with outstanding features. Write for Catalog No. 40

ACME INDUSTRIES Inc.
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NOW! YOU CAN SELL LOW COST AIR CONDITIONING
New Improved 'POLAR BREEZE'
... the Air Cooler with Automatic Humidity and Temperature Control

If you handled the nationally accepted and profitable Hall line before the war, you'll be glad to know these top quality evaporative Cooling Units are again available with many new improvements. "POLAR BREEZE" is sold in complete "packaged units" in various sizes for all types of business buildings and stores.

Air is purified by a chemical process removing bacteria and algae. Range—2,000—20,000 C. F. M. ... Coolpad Fibre Filter Cooling Pads. ... Self Cleaning—no Servicing. ... Weather Proof Metal Housing. ... Multi-Blade Pressure Type Blower. ... Directional Flow Gills. ... Roto-Atomizer. ... Doubles cooling and washing action.

INVESTIGATE NOW!! Territories Available to Reliable, Progressive Distributors and Dealers. Write, Wire or Phone Morton Grove 4594 and 1640.

AIR COOLING ENGINEERING COMPANY
Dept. C., MORTON GROVE, ILL.

They'll Do It Every Time By Jimmy Hatlo

TO MAKE IT EASY FOR THE HAUSFRAUS AND TO BEAT THE COMPETISH — CHOKIE CEREAL ANNOUNCED A ZIPPER BOX— COST? A HUNDRED THOUSAND FISH—

GENTLEMEN! THIS IS IT! COST US \$100,000 IN RESEARCH BUT IT'S WORTH EVERY PENNY! THE CONSUMER MERELY PULLS THE STRING— AND ZIPPO! THE PACKAGE OPENS! PRESS HERE—AND IT RESEALS ITSELF...



SO NOW WE'RE IN THE KITCHEN.. ISN'T SHE AN AWFUL GOOF? SHE OPENS UP THE PACKAGE LIKE A TWISTER RIPS A ROOF....



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Do You Have 'One Foot In the Door'?

Presenting...3 New Temprite

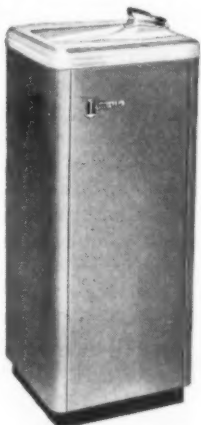


FIRST of Temprite's spanking new triplets is an explosion-proof drinking water cooler, Model PB-10WE, which may be used with absolute safety in potentially combustible atmospheres covered by CLASS I, Group D of the National Electrical Code. This classification includes gasoline, petroleum, naphtha, alcohols, acetone, lacquer solvent vapors, and natural gas. Approval of this model for other classifications in the National Electrical Code is pending, awaiting the completion of tests.

Temprite Model PB-10WE cannot possibly generate sparks or static electricity which might cause explosions.

The refrigeration compressor is hermetically sealed and all electrical apparatus and connections are enclosed within Underwriter's approved, explosion-proof housings.

Features: 10.3 gallons per hour capacity. Stainless steel top. Accurate temperature control.



TEMPRITE'S new Triple Service compartment-type Water Cooler takes plenty of bottles. Refrigerated storage compartment

actually holds up to 12 "Coke" bottles and 4 quarts of milk, ginger ale or other soft drinks, (or equivalent). Two handy trays freeze 28 cubes of ice and standard 3 or 5 gallon water bottle is always ready to deliver perfectly cooled drinking water through the Temprite Cooler... Compartment temperature is adjustable from 35° to 38° F., for storage of beverages, foods, pharmaceuticals, biologicals, etc. Temprite Model BTF offers plenty of sales appeal in thousands of offices, studios, small shops and laboratories, doctors' and dentists' offices, private clubs, homes, etc.



TEMPRITE'S Model PB-4 is another new drinking water cooler that rounds out a large family of no less than 10 models.

Offering 4-gallon-per-hour capacity, this new unit was designed for use in small manufacturing plants, small retail shops and offices, and similar establishments where drinking water requirements are moderate.

Like all other attractive Temprite bubbler type coolers, this latest model incorporates the following sales features: an automatic, adjustable water flow regulator; adjustable temperature control; sanitary streamlined bubbler on an attractive stainless steel top; an optional foot pedal attachment and a five-year protection warranty. All local and national sanitary codes are met.



TEMPRITE PRODUCTS CORP.
43 PIQUETTE AVE., DETROIT-2, MICH.

Send me sales franchise details and complete specifications on the following:

☐ Temprite Model ☐ Complete Line.

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Products Corp. 43 Piquette, Detroit 2

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

Is Socialism on the Wane?

GOVERNMENT business vs. free business has been and continues to be a polemic question among the "common people" of our nation. In this connection, several surveys conducted by the Psychological Corp. of New York to determine the prevalent thinking among voters on one phase of this controversy sheds a bit of light.

Results of one such survey, as revealed by Dr. Henry Link, indicate that one out of every three hourly-paid employees prefer government employment over that of free enterprise. But don't be too shocked, please.

Actually, it turns out, about one third of these pollees are at present employed by the government. Some 10 percent of the employable population in the United States can be found on one government payroll or another—including city, state, and Federal workers. It's easy work, usually, and they don't have to strain themselves—so perhaps their preferences should be discounted.

The present trend of thinking on this subject is somewhat encouraging, when compared with that of three years ago. At that time the Psychological Corp. posed the question: "If all manufacturing companies were completely managed by the government instead of private management as at present, would you get more for your dollar or less?"

And this year Dr. Link's interviewers posed the same question to the same group of voters. In 1945, 38% of the 2,500 persons interviewed thought they would get less for their dollar; while in 1948 the percentage had risen to 49. Of the remainder, 31 per cent was undecided.

The most recent survey conducted by the Psychological Corp. on this matter also reveals that those who favor government employment are made up largely of the lesser educated groups—comprising chiefly factory workers and unskilled labor, whose outlook often seems hopeless for the future as it is monotonous in the present.

The more highly educated pollees (business and professional people in the main) declared their allegiance to private enterprise in impressive proportions. Union dues-payers displayed more faith in government promises and benevolence than did non-union members, with 45 per cent of the unioners believing that socialistic enterprise would give them more than private enterprise. Fifty-one per cent of the non-union members polled thought that government ownership of industry and business would lessen the dollar value, and do less for them.

"The greater efficiency of private management as compared with government management is much better recognized today, according to these results, than a few years ago, at least in the manufacturing field," declares Dr. Link. "The 20 per cent who still believe that under government management they would get more for their dollar give as the principal reason for this belief that the government 'works without profit' and would give them more security."

The latest variation of this basic question presented by the Psychological Corp. to its panel of pollees was:

"If you could choose any job you wanted would you rather work for a private business company or for some department of the government?"

Sixty-one per cent of those questioned favored private enterprise, while 33% preferred government employment. Six per cent were undecided.

It's encouraging to note, however, that Socialism is apparently a waning influence on the people of the United States.

Neb. 4-Day Creamery Storage Law Hits Dairy Equipment Sale

LINCOLN, Neb. — Farmers and dairymen who have purchased high-priced refrigerated storage equipment with the idea of keeping their cream in the best possible condition while accumulating a proper shipping quantity, are being penalized by the four-day cream ruling of the Nebraska Department of Agriculture which became effective May 1, it was stated by State Senator Clyde Cretzinger.

He declared that he has received many complaints from farmers and cream producers in the Paxton district, which he represents. They claim the new regulation virtually forces them to ship to out-of-state creameries or take a price cut on their cream, while the sales of refrigeration equipment by dealers to farmers are being adversely affected. His constituents are not objecting to the cream grading idea, he added but rather to the ruling which arbitrarily places cream more than four days old under a second-grade classification, with resultant loss in income to producers.

Where cream is not properly refrigerated, he said, the regulation would be reasonable, but a large number of producers have modern mechanical refrigeration facilities, and now the four-day regulation nullifies their efforts to produce top-grade cream in an efficient though simple manner.

The new regulation provides that cream must be sold within four days after milking, regardless of refrigeration facilities. Tags are furnished buyers who date and attach them to empty cans which are turned back to producers.

The latter must bring the cans back within four days of the date on the tag in order to receive top price for the can.

State Agriculture Director Rufus Howard countered Senator Cretzinger's complaint with the statement that "a very noticeable improvement in quality of cream" has been noted since the regulation became effective. He added that for the first time, creameries over Nebraska have been able to make 92 score butter in carload lots.

He also reported that Iowa puts a similar regulation in effect July 1, while Kansas and South Dakota will follow suit within a few months.

Missouri already has such a rule, although a number of neighboring states do not have the restriction, and there has been a growing tendency on the part of Nebraska cream producers, who have refrigeration facilities for storage, to hold their cream until a shipping quantity has been accumulated regardless of the new Nebraska regulation, then ship it to Colorado or other states.

Louisiana Dealer Gets Nearly 25% Return on 'Freezer Key' Promotion

SHREVEPORT, La. — A list of 22,000 potential appliance customers, and at least 6,000 actively interested home freezer prospects was the result of a unique "Freezer Key" promotion, which was staged recently by Booth Furniture & Carpet Co., appliance dealer here.

With the idea of acquainting as many new people as possible with the home freezer and its meal-economy possibilities, S. T. Bryson, appliance manager for the store, cooperated with a chain of local food supermarkets to set up the stunt. Pointing out to the supermarket management that by interesting people in home freezer use, they could increase

sales of frozen foods, he got permission to stage a display in all of the chain's stores in the Shreveport area.

On display in each store was a colorful poster, with a stock of tagged keys for distribution among food customers shopping in the store. In addition, quarter-page newspaper advertisements were run advertising the "Freezer Key" stunt, and listing the prizes which were available to lucky key-holders visiting the Booth store.

Under the plan, food customers were invited to merely select a key, and fill out the tag attached to it, which was turned in at the store,

for later transfer to the Booth appliance department. On the tag was a space for the customer's name and address, a checked list of appliances, with a special box, in which the customer was asked to jot in the age of the appliance. Likewise included was a tear-off stub, which the customer was advised to keep, as a permanent reminder.

With the card filled out and dropped in a box, the contest entrant was then invited to visit Booth appliance department where eight home freezers, all stocked with frozen foods, were on display. One 8-cu. ft. model was locked shut, with

a large padlock, and keyholders were invited by the dealer to try their luck with it.

Prizes given to the lucky winners included not only the \$5 worth of frozen foods which went to each entrant whose keys turned the lock, but also the freezer itself, which was drawn from among 40 entrants who found that they had selected winning keys.

In this way, more than 22,000 keys were distributed in the space of two weeks, and more than 6,000 people actually entered the store, and showed interest in the eventual purchase of a home freezer, according to Bryson.

Taylor Comparator Helps Determine Corrosive Content of Cooling Fluid

BALTIMORE — A new slide comparator has been developed by W. A. Taylor & Co. here for corrosion control in the cooling fluids of air conditioning systems, refrigerating brines, diesel engine cooling systems, condenser cooling water, etc.

With a single slide comparator, it is possible to check the pH (active alkalinity) and the chromate content, the company said.

The comparator consists of a base and a slide, both molded from plastic. The base contains two vials of pH indicator solution with 0.5ml pipettes and 5.5ml test tubes. Each color standard slide contains five pH standards (cresol red pH 7.2, 7.6, 8.0, 8.4, and 8.8) and four chromate standards with values suitable for the application.

For example, in air conditioning systems the values 300, 400, 500, and 600 parts per million of sodium chromate are usually employed. The value of each standard is engraved on the slide. The complete comparator is 10 in. long, 2½ in. wide, and 4 in. high and weighs only 1½ lbs.

"To determine the pH of the cooling water, brine, etc., it was explained, "three test tubes are filled with the sample to the mark (5ml), and placed in the holes back of the three slots in the base. To the middle tube is added 0.5ml of pH indicator solution by means of a pipette, and the contents of the tube mixed well.

"The color standard slide is placed on the base and the pH section of the slide is moved in front of the test samples until a match is obtained. The pH is then read off directly from the values on the slide.

"The chromate determination is made by placing a test tube full of sample in the base, and comparing directly with the chromate standards. The values are then read off directly from the values on the slide."

Further information on the comparator may be obtained by writing W. A. Taylor & Co., 7300 York Rd., Baltimore, Md.

Quiet Kool Plans Big Room Cooler Promotion Abroad

NEWARK, N. J. — Orders were received recently from Pakistan, Iran, Siam, Mexico, and Cuba for Quiet Kool room air conditioners through the International Sales Div. of Sylvania Electric Products, Inc., distributor of the Quiet-Heat line for export, it was announced by Quiet-Heat Mfg. Corp.

The manufacturer also reported that Sylvania's International Sales Div. intends to conduct an extensive advertising program in order to promote the Quiet Kool line abroad.

The Quiet Kool air conditioner and the Quiet-Heat oil burner are now prominently displayed in the division's new showroom at 1740 Broadway, New York City.

Bigger Rink Than the Garden?

Small Town Raises Funds for \$140,000 Ice Rink Job

CLINTON, N. Y. — An indoor ice rink that is claimed to have a larger surface than the rink in Madison Square Garden, was installed last winter in this hockey-rabid town by the C. W. Davis Supply Co., Inc., York dealer located in Syracuse, N. Y.

Clinton has a population of less than 1,600 yet, through a non-profit corporation, it was able to raise more than \$90,000 for the construction of the arena and some \$50,000 for the ice-making machinery and shelter. Shares valued at \$100 each were sold to local residents to raise the needed funds.

The ice-making machinery is

housed in a 15 by 70-ft. addition to the arena. The addition is a two-story structure, which contains, besides the ice-making equipment, a lobby and utility room where refreshments can be served to arena visitors.

The steel brine pipes are more than 8 miles in length. They are 1½ in. in diameter and installed on 4½ in. centers which are about 3 in. apart.

The pipes are covered by about 6½ in. of sand on which the ice forms. Only one day is required to make the initial layer of ice. Once made, the ice will be maintained in good condition all season through a

regular thermostatic control, it is reported.

The arena measures 228 ft. long and 119 ft. wide. In addition to hockey matches by school, college, and professional teams, it is used for ice carnivals and public skating.

The building will seat 2,000 spectators and provides standing room for 500 more.

In addition to the funds raised through the sale of bonds, much of the actual work was done through the voluntary services of electricians, carpenters, plumbers, school children, and local businessmen, it was reported.

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"Boiling Point"	"Boiling Point"
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"Boiling Point"	"Boiling Point"
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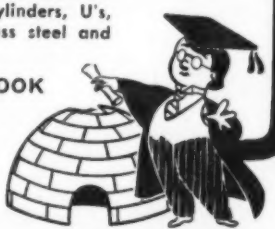
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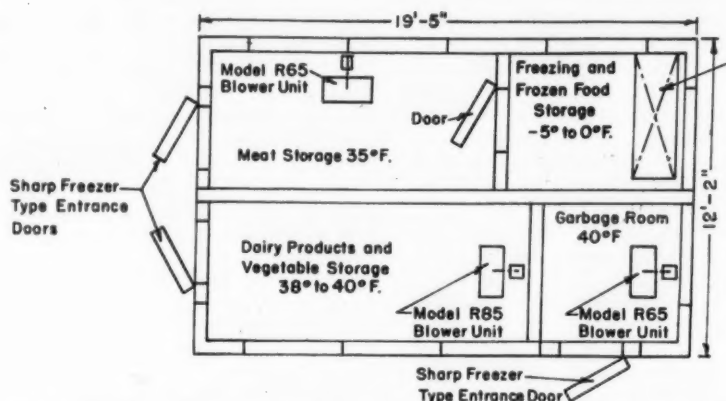
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Typical Pre-Fabricated Low-Temperature Installations



This institutional multi-purpose Reco-Fab refrigerator was installed for the S. Blickman Co., a restaurant and institutional supply firm. It includes four low-temperature rooms for various types of produce and meat storage.

Sectional Walk-In Coolers Offer Low Cost And Easy Expansion To Fit Changing Needs

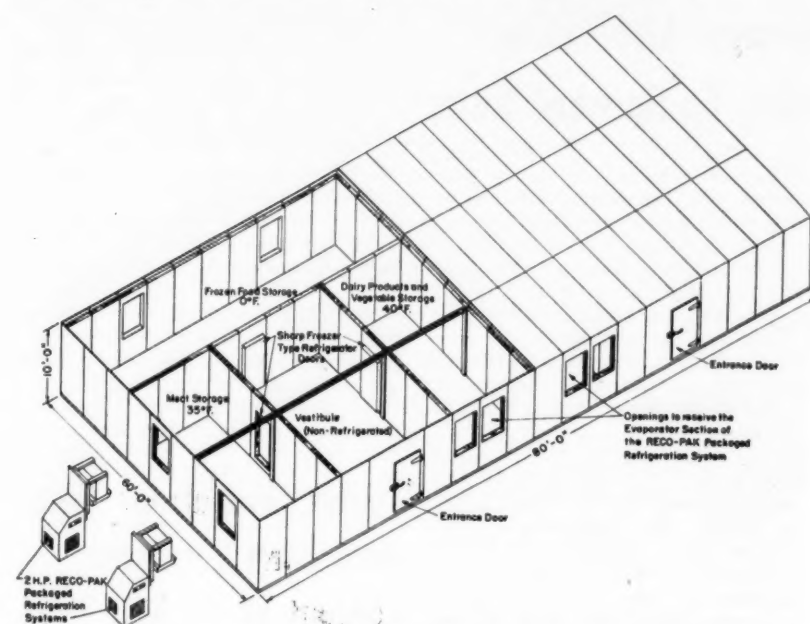
PHILADELPHIA—The use of standard, pre-fabricated, insulated panels to construct low-temp rooms for frozen food storage, long used in smaller applications for both frozen food and ice cream storage as well as ice cream hardening, is finding its way rapidly into the larger fields of wholesalers' storage and handling plants, as more and more operators recognize the merits of sectional, "pre-fab" construction.

Installations already made and in the process by the Reco Products Div. of Refrigeration Engineering

Corp. in this city illustrate how readily adaptable to such extensive use are sectional type walk-ins.

Favorable costs of pre-fab construction have been in large measure responsible for the trend, together with steadily increasing sales volume that leaves present space cramped; the ease with which the new sectional units can be enlarged; plus the fact that changes in patterns of distribution are bound to occur and require movement of some plants.

As an example of this flexibility, Reco cites one of its "Frosty-Vaults"



This "Frosty-Vault" Metalply warehouse is being built for the Creole Petroleum Corp. of Venezuela.

Metalply warehouses built for the Creole Petroleum Corp. of Venezuela, purchased by Creole through International General Electric Co., Inc. The multi-compartment Reco-Fab, measuring 60 ft. x 80 ft. x 10 ft. high, is to be installed at the company's Carapito warehouse operations. The entire building is constructed of individual panels sheathed in Metalply, which consists essentially of aluminum bonded to plywood under pressure.

Includes 8 Rooms

The multi-compartment job built for Creole is divided into eight individual rooms designed to permit frozen food storage, dairy products and vegetable storage, meat storage, and, also, a non-refrigerated vestibule for use as entrance room and work room. The structure will be erected on a concrete platform, and covered by a corrugated roof to protect it from direct sun load. The platform will be high enough to permit normal truck loading, further speeding handling.

A feature of the warehouse is that it has been designed to permit division of the building into two separate units whenever required. The main center dividing wall is actually two walls, backed solidly together to make possible later division.

Refrigeration equipment for the Carapito warehouse consists of individual packaged refrigeration systems which were completely assembled at Reco's Philadelphia plant. Each system will produce either 0° F. or medium temperatures and is equipped with a completely automatic electric defrost system. These packaged refrigeration systems contain General Electric 2-hp. air-cooled "Freon-12" compressors and Bush blower coils, and are equipped with permanently mounted distant-reading thermometers and high and low pressure gauges. A total of 12 units will be used on the Carapito job, and two additional units are to be held as spares.

Smaller Unit Under Construction

A smaller, multi-compartment installation designed for institutional use is under construction by Reco for the S. Blickman Co., a leading restaurant and institutional supply company.

This Frosty-Vault is a four-room unit, measuring 12 ft. 2 in. x 19 ft. 5 in. x 8 ft. high, designed to store fresh vegetables and produce, frozen meats and frozen foods, and fresh meat, providing, as well, garbage storage space.

Plate stands are utilized in the frozen food compartment, giving a contact temperature of -25° F. to permit food freezing, and maintain-

ing a storage temperature ranging from -5° F. to zero for frozen food storage in the balance of the compartment. The other three compartments will use conventional forced convection blower coils.

Uses 'Wedglok' Fasteners

This installation, also, is constructed of Metalply panels, and uses new, patented "Wedglok" fasteners designed by Reco to eliminate the necessity of hand-holes, lags and pods, and to permit maintenance of a vapor barrier, since the fasteners are contained completely within the framework of the panels. Panels using this new Wedglok device need only be set in place, and require but the tap of a hammer to effect proper alignment and lock-up. Subsequent changes in arrangement are, Reco states, exceptionally simple because of the threaded device used to disassemble the units.

Instead of mastic, Reco uses double gasketing of double-bead live rubber, set in place at the factory on the tongue sections of both sides of the panels. Flooring in the two installations described will consist of factory-laid tongue-and-groove oak flooring, while all the door sills are 1/4 in. diamond plate. Doors are to be of the superfreezer (outfitting) type.

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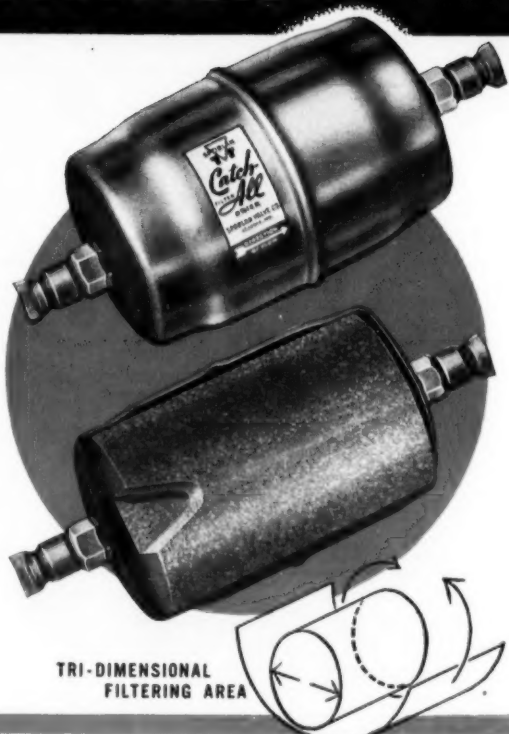
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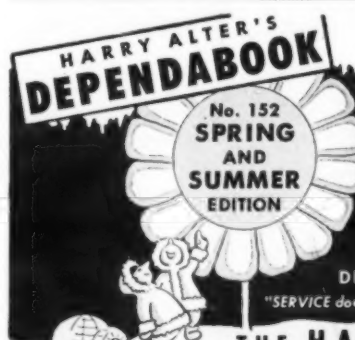
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Selecting Driers

Knowing Horsepower Rating, Type of Condenser, and Evaporating Temperature of Refrigerant Can Simplify Problem

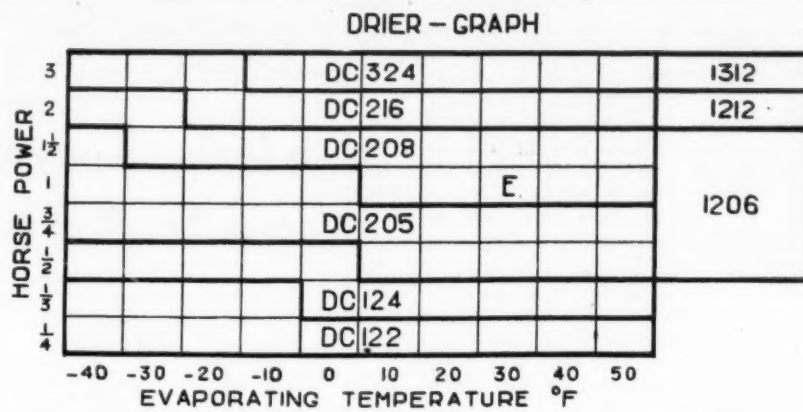
NEWARK, N. J.—A new method of selecting driers which takes into consideration the horsepower of the condensing unit, suction temperature, and other factors has been devised by McIntire Connector Co. here.

Available in two "Drier-Graphs," one for air-cooled condensers, the other for water-cooled machines, the selection method permits matching the drier closely to the system over a wide range of sizes and applications, it is claimed.

The use of horsepower ratings goes back to the early thirties when requirements of a drier were much simpler than they are today, explains McIntire. Sulphur dioxide and methyl chloride were the chief refrigerants in use and evaporating temperatures covered a limited range. Methyl chloride, due to its ability to hold large amounts of water at saturation, made drying easier.

At that time, in order that a guide could be established for drier selection of the original DFN line, a fixed volume of activated alumina was used per horsepower of the condensing unit. This rating was used for sealed type driers as well as the cartridge type.

The introduction of "Freons" presented new problems in drying, the company states. The range of evaporating temperatures increased until



Package Units In Mushroom Growing

Zone Control Possibilities Are Main Advantage In This Type of Air Conditioner Application

LIMA, Ohio—The obvious advantages of packaged units in many air conditioning applications have brought about the tremendous increase in the use of package jobs for comfort cooling. But there have also been numerous instances in which packaged air conditioners have been found to be completely satisfactory for industrial and commercial "process" jobs where very close control of temperature and humidity are required.

Some of the advantages of packages which are evident in these applications parallel those in other installations; first cost and operating cost are still low in comparison with central plant systems, and although for exact conditions ductwork is usually used, installation is also often cheaper because of the compactness and mobility of the units. The fact that each unit can be repaired individually without affecting the rest of the system in case of breakdown, is also important in commercial applications, where the failure of the entire system, as sometimes happens with central plant machinery, could cause serious damage.

But a major advantage is the principle of "Zone Control." When used in multiple, packaged conditioners of the Typhoon type are individually governed by thermostats located right in each unit. Thus any

variation in temperature in any one zone, will be automatically rectified by the thermostat in the unit.

In central systems, thermostatic control is usually supplied by one thermostat, which must necessarily govern air conditioning supplied to all sections on the basis of a mean temperature for the entire area.

A recent example of the successful use of packaged air conditioners for commercial purposes is found in an installation for the Ohio Mushroom Co. in Lima, Ohio, where two 10-ton self-contained Typhoon air conditioners and one 20-ton Typhoon evaporative condenser have been installed by the Komminsk Refrigeration Co. in Lima.

The rate of growth of mushrooms is extremely dependent upon temperature. For example, the commercial variety grows from a tiny button to a full size mushroom in 22 days at 50° F., 10 days at 60° F., and six days at 70° F. Thus commercial mushroom culture is more nearly a controlled industrial process than the growing of virtually any other agricultural crop.

The accepted cultural method of growing mushrooms is intricate and precise. Fertilizer is composted or partially decomposed, and then placed in beds about 5 in. deep where it is allowed to generate heat for several days. The house is then cooled down and the propagative material called

spawn is planted about one foot apart in the beds. After about two weeks, the beds are covered with an inch of rich soil. About six weeks from the time of planting the mushrooms begin to appear and harvesting continues for about six months. The beds are then emptied and the entire process is repeated.

In the Ohio Mushroom Co. installation, illustrated on the accompanying diagrams, one 10-ton self-contained Typhoon air conditioner is used for each set of two rooms. Four branch ducts from each unit run along the ceiling, so that the cooled air will settle slowly toward the bottom of the room.

Mushroom beds, 5½ ft. wide and 72 ft. long, are stacked seven feet high to a height of about 14 ft. There are 14 beds per room, and one room is 16 ft. high. The average harvest is figured at approximately 1¼ lbs. of mushrooms for every square foot of bed surface during the harvest cycle.

There are three distinct stages of temperature inside the mushroom house.

1. After the beds are first filled with fertilizer, which generates considerable heat, the bed temperature runs between 120° and 140° F. The fertilizer loses moisture during this period and consequently the room becomes very humid.

2. During the second period, after

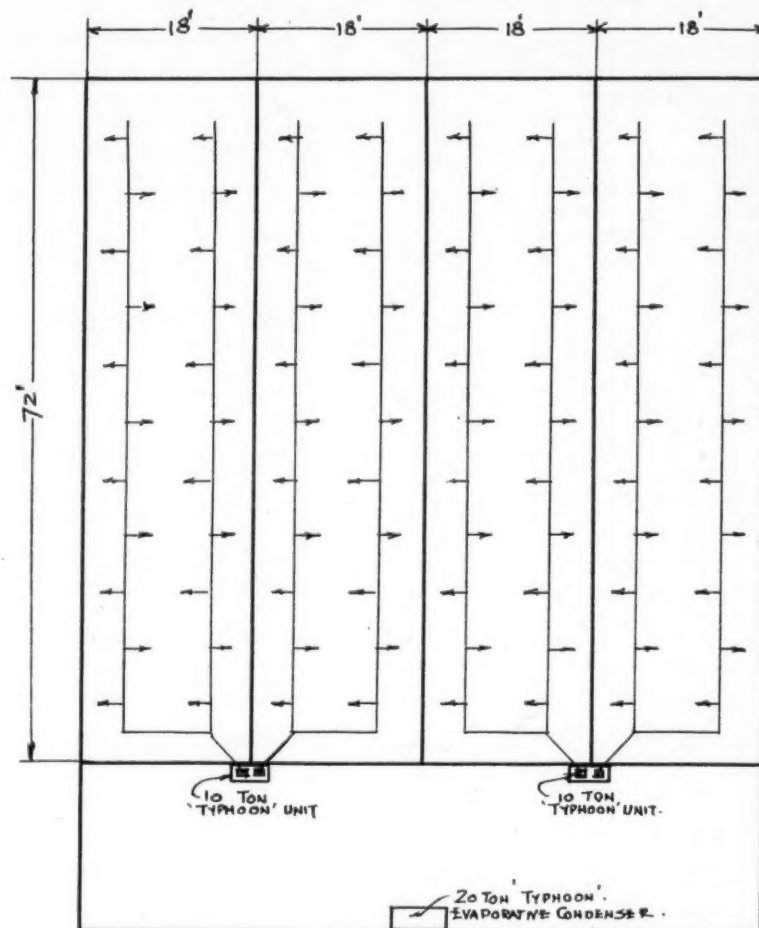
the spawn has been planted in the beds, a moderate temperature of 65° to 75° F. with high humidity is required.

3. The third period, when the mushrooms are developing on the beds, is the most critical of all. Bed temperatures of 58° to 60° F. are required, with moderate humidity.

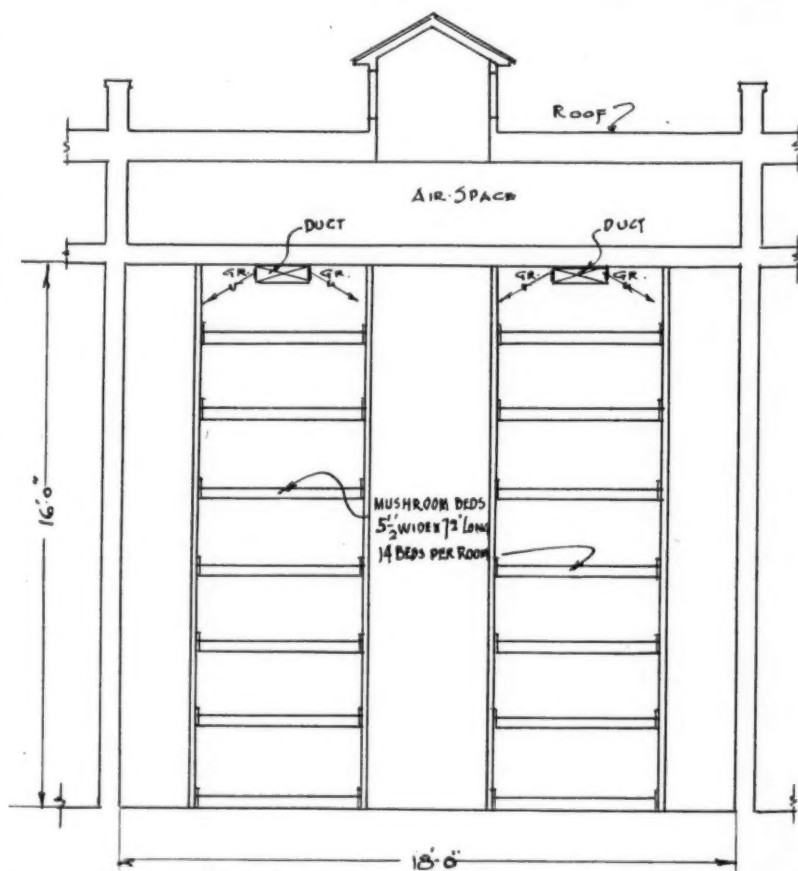
Carl H. Komminsk, owner-manager of the Komminsk Refrigeration Co., is looking forward to more commercial applications for packaged

units. "The most important single feature of this type of installation," he says, "is the Zone Control principle. For example, if scattered clouds should produce a fluctuating heat load on the south wall, a centrally located thermostat would tend to overcool the north side of the building and undercool the south side, whereas a packaged unit on the south side will automatically adjust for the varying temperatures, and other units will not be affected."

Detail In Mushroom House Air Conditioning Setup



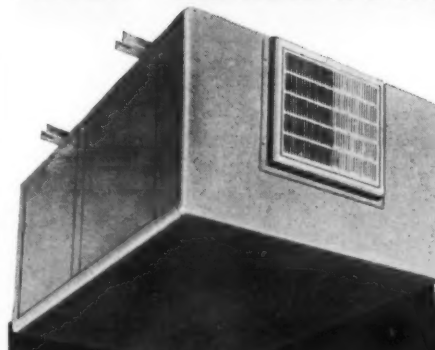
Layout of the Ohio Mushroom Co. installation, illustrating the four rooms served by two 10-ton Typhoon Air Conditioning packaged air conditioners.



Section view of the air conditioning system for the "growing house" operated by the Ohio Mushroom Co., Lima, Ohio, showing the location of the air conditioning ducts and the mushroom beds.

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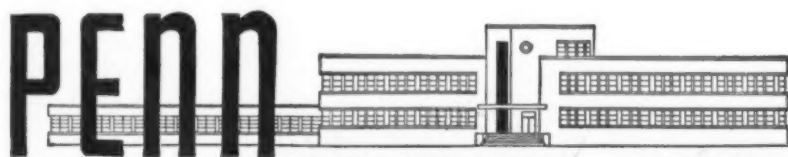
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Latest Reports of Refrigeration Exports Show Increases Despite Dollar Shortage

By Eugene Hesz, International Market Analyst and Instructor, University of Detroit

Previously presented in these columns was a complete picture of the exports of our industries to about one hundred different countries of the world, comparing 1948 and 1949 data. A short time ago the 1949 figures have become available in their entirety so that the comparison can be brought up-to-date.

It goes without saying that changes of larger size are due to political, economic, or legal developments, or to a combination of factors. In all cases, where possible, the causes for the changes to be shown will be given.

The order followed is the same as that used in the series of articles, the last one of which was published on Feb. 6, 1950. Therefore, the beginning will be made with the other Americas, starting with Canada.

This follows the practice of the U. S. Department of Commerce and will make it easy for our readers to follow through with the very latest statistics as released by the above agency.

CANADA

Our total exports to Canada (of course only pertaining to our industries) have recovered to \$12,182,000 as against \$10,919,000 in the year 1948. We are not yet back to the \$16,290,000 of 1947. The recovery is due in large part to the increased exports of electric household refrigerator parts. Since the foreign exchange situation in Canada has improved, informed circles are of the opinion that the present restrictions will soon be alleviated, which will benefit our exports.

MEXICO

Our exports have shown a nice improvement from \$4,234,000 in 1948 to \$5,081,000 in 1949. The improvement is not confined to any particular product. Foreign exchange restrictions are practically unchanged, but general economic conditions favoring American exports became better.

PANAMA AND CANAL ZONE

Our total exports to these regions have receded from \$1,135,000 in 1948 to \$879,000 in 1949. There are no changes regarding restrictions. American exports are freely permitted. Further withdrawals of American military personnel and civilians are responsible for the change.

CUBA

Our exports to Cuba had risen from a very good 1947 showing \$5,690,000 to a still better 1948 with \$8,608,000. In 1949 they are back to \$5,319,000. The main item which suffered was domestic refrigerators. The market had become a little sluggish but the outlook remains very good.

DOMINICAN REPUBLIC

The year 1948 showed a total of \$728,000 for exports of our industries to this country. The 1949 figure is \$449,000. Mainly affected were electric household refrigerators and self-contained commercial refrigerators, as our tables show. The general export situation and legal restrictions, however, are unchanged. This market should improve again.

COLOMBIA

Exports to Colombia are practically halved when comparing 1948 with 1949: \$2,774,000 against \$1,381,000. Most affected have been the exports of electric household refrigerators and auxiliary equipment.

As is known in export circles the Colombian dollar situation has received a set-back, but in 1950 the situation had taken a turn for the better, until, a few weeks ago, very unfavorable harvest reports have confused the picture again. This country is very interested in assisting the economic recovery of Colombia which is proven by a recent loan of the International Bank for Reconstruction and Development.

VENEZUELA

With its nearly nine million dollars worth of imports of our equipment Venezuela remains an extremely important market. Recent iron ore developments point in the same direction, as also completed plans regarding a new assembly plant for American automobiles. Besides, refining of petroleum products within the country itself is a growing industry. Venezuela remains one of our best markets.

CHILE

The general situation is not yet much better but shows signs of improvement. Our exports have recovered from \$486,000 (1948) to \$632,000 (1949) after a much better \$850,000 (1947).

BRAZIL

Our exports are practically halved: 1947, \$11,872,000; 1948, \$12,084,000; 1949, \$6,683,000. The setback is spread over many products but

amounts to over \$4,000,000 alone in the field of domestic refrigerators. Importers in Brazil had been aware of coming sharp restrictions and had boosted their imports in 1948.

Import restrictions are not much changed from the legal angle. However, the entire system has been streamlined and now works better and smoother. The latest reports are that the backlog of dollar debts is being cleaned up at a greater speed.

URUGUAY

The results of our efforts in boosting exports to that country had the result that we achieved a total of \$1,138,000 for 1949 as against \$905,000 in the preceding year. The future outlook appears promising within the framework of the economy of this small, but relatively healthy country.

ARGENTINA

The figures speak a vivid language: Exports of our industries 1947, \$8,211,000; 1948, \$4,428,000; 1949, \$1,309,000. An explanation for what is happening was given in full in these columns several months ago.

The latest development is that in May, 1950, the Export-Import Bank of Washington has given an important dollar credit to Argentina, trying to assist that country to regain its economic vitality. The proceeds of this credit will only be used to make payments to American exporters for long overdue commercial debts from Argentina. Everybody hopes that this signifies the turn of the tide for the better.

SWEDEN

Our exports to Sweden with \$205,000 in 1949 as against \$307,000 in 1948 and \$2,715,000 in 1947 are still very poor. Sweden remains poten-

tially a very good customer and it may be surmised that the end of the Marshall Plan will have a beneficial effect for the development of our trade with this intrinsically rich and healthy country.

NORWAY

Norwegian imports of the products of our industries have risen from \$222,000 in 1948 to \$410,000 in 1949. The greatest improvement was shown in the department of domestic electric refrigerators. Legal restrictions remain unchanged.

EIRE (IRELAND)

A recovery in our exports has lifted the total from \$163,000 in 1948 to \$291,000 in 1949. The domestic electric refrigerator is the mainly improved item. These figures are not yet good; compare: 1947, \$586,000.

NETHERLANDS

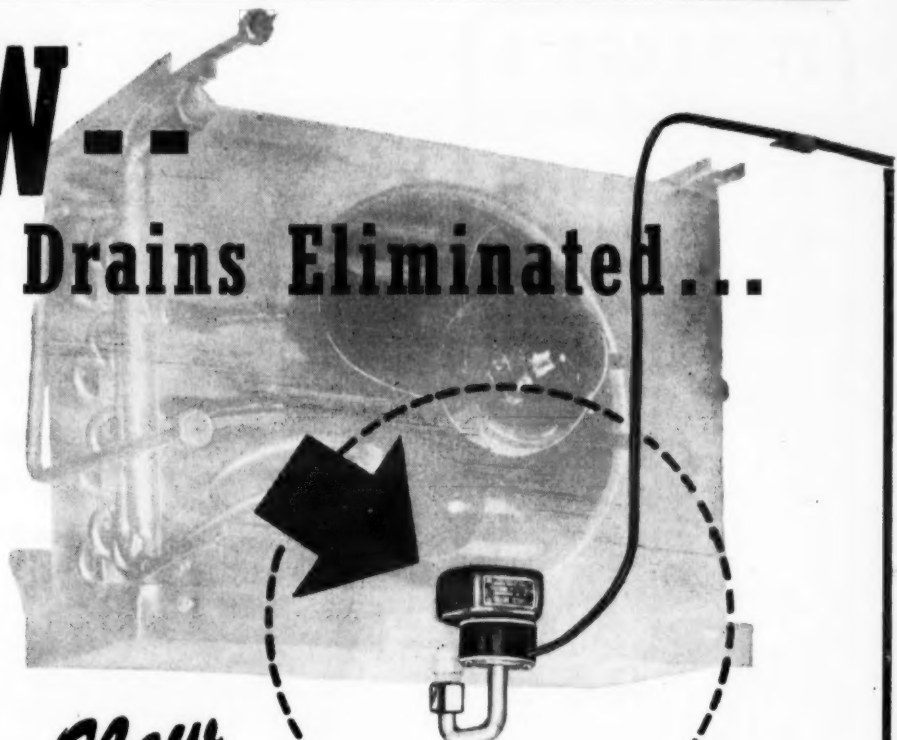
The Dutch market should be an excellent one, but the dollar situation remains very strained. 1947, \$633,000; 1948, \$343,000; 1949, \$258,000.

BELGIUM

Since the end of the last war Belgium has adhered as much as possible to the free enterprise system, with as little state interference as possible. It is interesting to compare the Belgium figures of imports of our products with those of the Netherlands, the neighboring country with a practically state controlled economy: Belgian imports in 1947 amounted to \$2,018,000 (Netherlands: \$633,000)—1948, \$3,191,000 (Netherlands: \$343,000)—1949, \$2,509,000 (Netherlands: \$258,000). Import restrictions remained practically unchanged.

(To Be Continued)

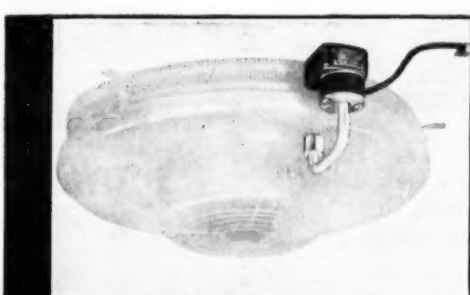
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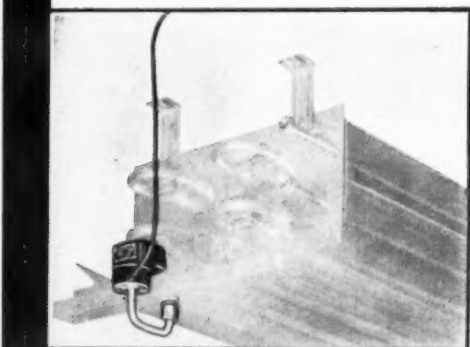
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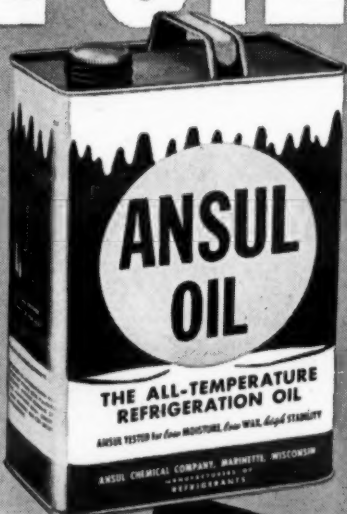
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Unique Installation Has Room Conditioner In Basement of Home To Cool Library Above

Conoflow Corp.
Philadelphia, Pa.

Dear Herb:

I have recently installed in my library what I believe to be the first remote installation of an air-cooled self-contained air conditioning unit which has all the fine points of a central air conditioning system.

I am sure that the details of this installation will be of particular interest to you since I purchased for this purpose an all-year Remington 1½-hp. "Climate Controller" thermostatically controlled for regulating cooling as well as heating.

Purpose of the Remote Installation

Our library is the room we use mostly throughout the year but especially during the warm weather. The room is approximately 14 ft. by 16 ft. and has a large bay window facing the garden. The window sill is about 14 in. above the floor.

For the past three years, I have made use in this room of a ¾-hp. floor-type room air conditioner which I had installed into the French window and which gave sufficient cooling except on very hot days. However, the unit obstructed the view to the garden and the noise level, especially during the quiet evenings, was objectionable even though the unit, as such, is not considered noisy.

In selecting a unit for this job, I decided on the Remington 1½-hp. air-cooled job. Since the capacity

was more than I required for this room under normal conditions, I had it put under complete automatic control. Furthermore, I was partial to an air-cooled job inasmuch as the cost of water would have been prohibitive.

Description of the Installation

I am enclosing a set of three photographs and shall refer to them for convenience in giving you a detailed description of the installation. The Remington unit is located in the basement directly underneath the library. You will note from the photograph that the indentation in the wall corresponds roughly to the shape of the bay window in the library.

The unit was mounted on a table approximately 37 in. above the floor and was so arranged that the discharge from the condenser would be in a straight line with the basement window. Note the ¾ in. rubber strips, approximately 6 in. x 18 in., which were inserted between the surface of the table and the unit in order to take up any vibration. The unit was mounted in such a manner as to allow free access either from front or rear or top in the event of servicing.

Condenser Air Duct

The transformation duct for the condenser air discharge goes through the middle pane of a three-pane window. Note the built-in damper and the canvas connection on the condenser air duct assembly. The well into which the condenser air discharges is approximately 5 ft. below the ground level. The duct assembly is equipped with a rodentproof screen.

For the outside air intake, I am using basement air. This method of handling the air simplified the installation and assures me of a drier basement because of the constant air movement.

Return Air Duct

Use is made of the return air duct of the existing heating system, as

"Every once in a while," writes Herbert L. Laube, president of Remington Air Conditioning, "I get fan mail from an enthusiastic user of a small air conditioning unit. It seems that the installations they write about are always in their homes—even though many of them also have units at their offices. I think these enthusiastic letters show what a market we may ultimately have in the home once we break the ice."

"One of the most interesting of these letters came from M. Mark Watkins, vice president of Conoflow Corp., Philadelphia. He describes an installation in his library which he thinks may be the first remote installation of an air-cooled self-contained unit which has all the fine points of a central air conditioning system. The unit he used was a Remington 'Climate Controller' a non-decorative version of our deluxe console model room air conditioner."

Watkins, who was at one time associated with Carrier Corp. and Minneapolis-Honeywell, described in detail the residential installation which may interest many readers, and we are reproducing his letter in full.

well as a return grill which is at present installed directly underneath the bay window in the library. Note from the photograph that a damper was installed in the return air duct directly ahead of the unit.

During the heating season, this damper is open but when the heating system is shut off, the damper is closed. Note the canvas connection on the return air duct assembly in

order to take up any vibration from the unit.

Air Filter Assembly

By taking the filter out of the unit and by locating it outside, the problem of removing it for inspection or replacement becomes quite simple. Note in the photograph that I have purposely exposed the filter partly in order to illustrate the construction of the duct. Also note the slider above the filter which prevents any air intake when the filter is in operating position.

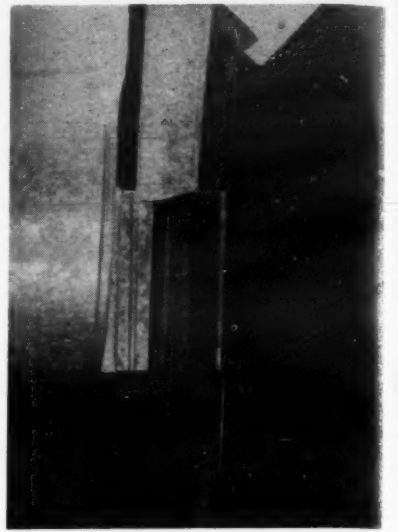
Air Supply Duct

The total length of the duct from the unit to the outlet grille in the library is approximately 35 ft., which includes five 90° turns. Since I had in the Remington Climate Controller nearly 4/10 of an inch of static head to play with, I was not unduly concerned about sizing the ducts too closely.

Upon leaving the basement, the duct comes up through a clothes closet which is adjacent to the library. In this way, there was a minimum amount of cutting or patching to do. The grille installed in the library was a four-way Titus Airfoil 24 in. x 6 in. With this type of grille, it was quite easy to direct the air flow so as to completely eliminate all drafts.

Electrical Connections

In the basement, as you face the unit, you will note two plug outlets. The one on the left is a three-prong outlet for the power circuit. The outlet on the right is a four-prong outlet for the control circuit.



Close-up of the air-cooled air conditioner has the air filter partly withdrawn to show how easily it can be replaced.

In the library, you will note on the right wall a switch with two bullet lights and a thermostat below. The lights indicate when the compressor is on (green light) or when the heater is on (red light). The unit can be started or stopped by flicking the switch between the two lights.

The switch and the two lights are standard equipment and come mounted on a single switch panel. The switch in the library does not handle the full load. It operates through an Allen-Bradley relay which is located in the basement adjoining the main switch. This reduces the fire hazard and makes it unnecessary to run heavy wiring through the walls.

Noise Level

When the switch is turned on in the library, and the unit is running, you can hear a noise which would be equivalent to the noise of an oil heating system. You will be interested to know that there is no difference in the noise level whether the compressor is off or on.

Most of the noise, I find, comes from the inrush of condenser air. We have had guests in the library when the unit was operating in the basement and they were completely oblivious of any noise. Accordingly, I find the noise level quite satisfactory.

Cost of Installation

By handling all of the engineering and sub-contracting work myself, I was able to keep the cost of the installation below the level of a commercial job. I would be very glad to send you the breakdown of my costs if you are interested. I would say that the total cost of what you observe in the photograph ran slightly less than \$350.

How Well Does It Work?

The really hot weather is not yet upon us but within the past week, we have had a couple of warm days and I am happy to be able to tell you that I have had most satisfactory results. By flicking the switch on in the library, the unit brought the temperature in the library down to a comfortable 75° and kept it at that point automatically.

Upon retiring for the evening, we would turn the switch of the air conditioning off just as we would turn off the lights.

M. M. WATKINS



Discharge grille is in the top shelf of the bookcase, and at extreme right are the signal lights and summer-winter thermostat controlling the conditioner.

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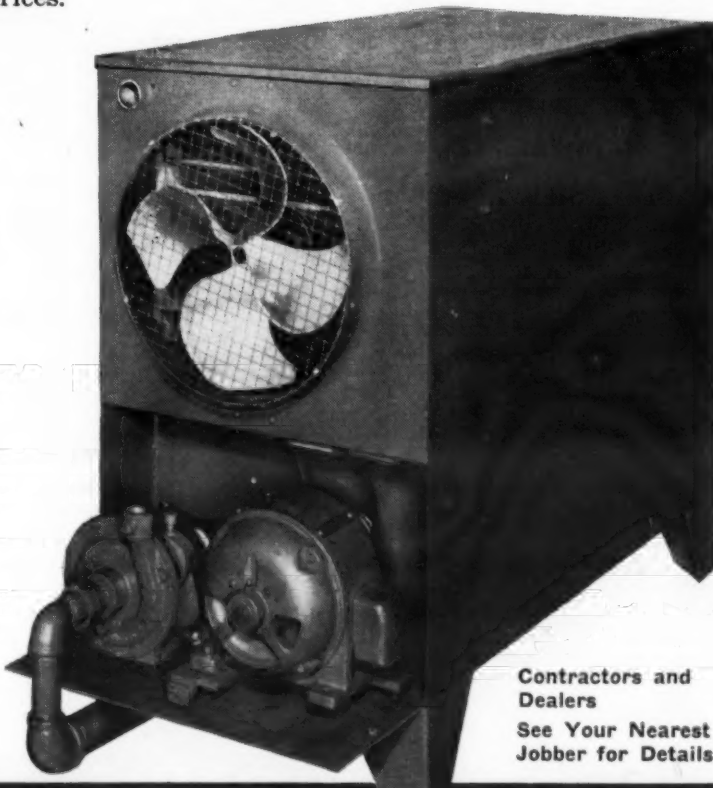


The new Peerless Aqua-Saver Cooling Tower, now being introduced on the market exclusively through refrigeration equipment wholesalers, permits retail dealers to receive quick delivery through stocking jobbers in their territory at extremely competitive prices.

- Aqua-Saver is of the self-contained type, manufactured in five sizes: A-30, 3-ton capacity; A-50, 5-ton capacity; A-75, 7½-ton capacity; A-100, 10-ton capacity; and A-150, 15-ton capacity.
- Aqua-Saver models are supplied as standard with variable speed pulleys. Therefore, pumping capacities can be changed without having to change pulleys.
- Aqua-Saver uses a one horsepower motor on standard models from A-30 through A-100. Two horsepower motors are used on Model A-150 which drives the pump and propeller fan in unison.
- Aqua-Saver Tower is constructed from 14-gauge copper bearing sheet steel throughout, employing the use of a gravity flow water distributing pan.
- Aqua-Saver deck filling is of a select grade of cypress and is equipped with a brass float valve for the control of make-up water.
- Aqua-Saver exterior metal surfaces are finished in silver gray Hammeroid finish.
- Aqua-Saver Model A-30 will pump capacities varying from 9 gallons per minute at 65 feet, to 12 gallons per minute at 60 feet. Whereas, the largest model, A-150, will pump variable capacities from 45 gallons per minute at 80 feet through 60 gallons per minute at 70 feet.
- Aqua-Saver Tower, in all models, is rated on both 3 and 4 gallons per minute per ton from 75 degrees through 80 degrees wet bulb temperatures.
- Aqua-Saver interiors are finished with combination asphalt and rubberized coating which acts as a sound deadener and protects the metal against corrosion.
- For further details, get complete information on Aqua-Saver from the nearest jobber in your territory.

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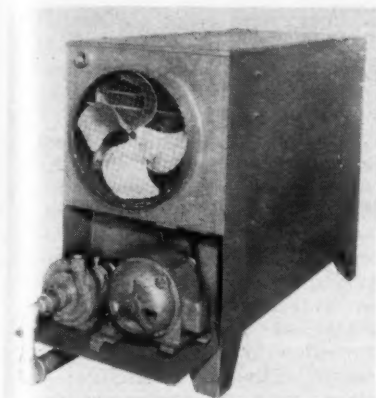


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PEERLESS SALES
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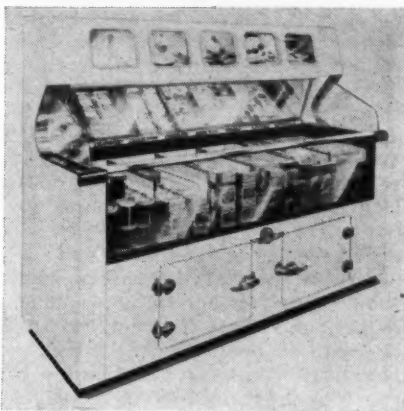
THE BOYLE BLDG.
LITTLE ROCK
ARKANSAS

Aqua-Saver Cooling Tower Handled by Wholesalers



Each model will be standard with variable speed pulleys on both motor and pump to vary pumping capacities without changing pulleys; exterior finishes are silver gray Hammerloid; combination asphalt and rubberized interior finish acts as sound deadener and protection against corrosion; models are completely self-contained type, using a 1-hp. motor on the standard models from A-30 through A-100, and 2-hp.

Ace Frozen Food Case Holds Large Volume



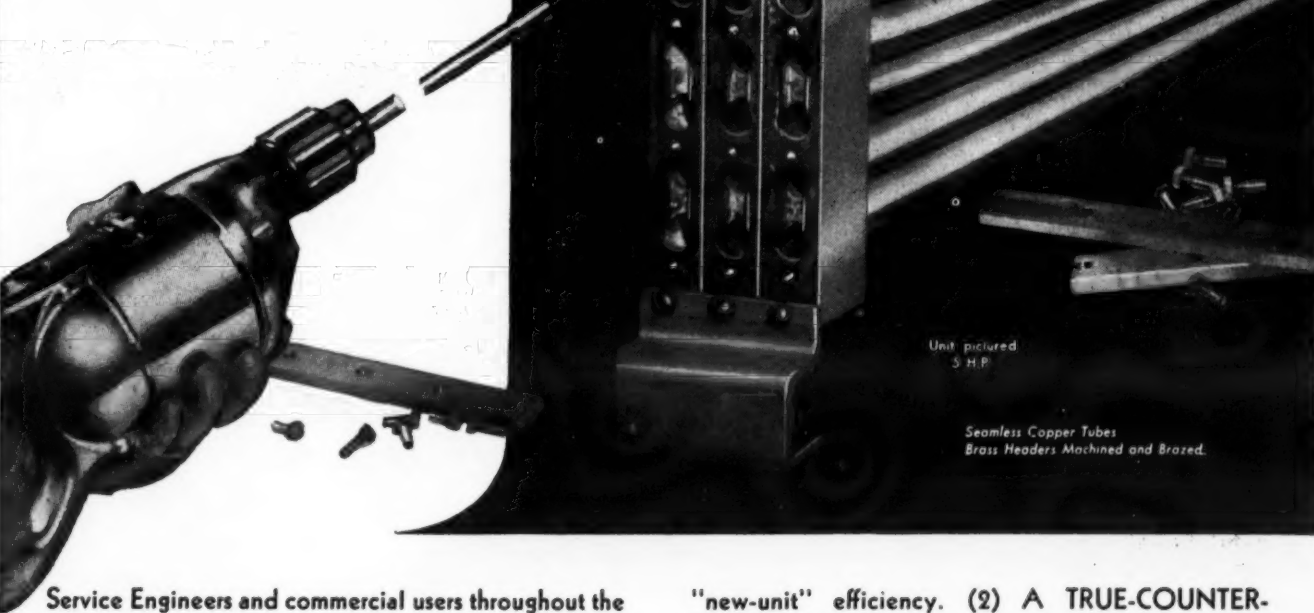
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Excessive Pressure Drop Cuts Efficiency; Can Be Avoided by Proper Sizing of Lines

ST. LOUIS—The importance of sizing refrigerant lines properly to keep pressure drop at a minimum and system efficiency at a maximum was stressed by J. A. Schenk, chief engineer of Alco Valve Co., in a talk presented at the 1950 Midwest Refrigeration and Air Conditioning Educational Conference here.

"Pressure drop exists in any line when flow of refrigerant occurs due to the friction encountered by the moving refrigerant in contact with the side wall of the tube or pipe," he explained.

"In general, all refrigerant liquid and suction lines must be adequately sized for minimum pressure drop, otherwise the system may be seriously penalized.

"There are applications where, because of certain factors involved, a more economical choice of line may be made than would be used if a general recommendation is followed. However, in such instances, these factors must be weighed carefully and detailed calculations made to be sure that the size of line selected will give the over-all desired performance of the system.

"Liquid control valve manufacturers rate their products on the basis of solid liquid entering the expansion device. In order to depend on the capacity of the expansion device selected and to secure best performance from it, the system must be arranged so that solid liquid en-

ters this control device at all times when the system is in operation," Schenk emphasized.

"With this thought in mind, the maximum pressure drop allowable, in order to prevent flash gas in a refrigerant liquid line, is governed by the amount of sub-cooling of the liquid refrigerant. Where no heat exchanger is involved to sub-cool the liquid refrigerant, it is well to keep the pressure drop in the liquid line to a minimum of approximately 2 to 3 p.s.i. for line loss, plus approximately 2 p.s.i. through a liquid solenoid valve if one is used.

"If a heat exchanger is used to sub-cool the liquid refrigerant, more pressure drop in the liquid line can be tolerated without the formation of flash gas.

Overlooked Problem

"On installations where the evaporator is above the condenser, a vertical lift in the liquid line is encountered. In addition to the pressure drop due to friction of flow, an additional pressure drop is encountered due to loss in pressure in the vertical lift. This loss in pressure, due to vertical lift, has frequently been overlooked and as a result many systems have not produced the performance expected of them.

"If the normal amount of liquid sub-cooling available is not sufficient to keep the liquid in a solid state at the reduced pressure due to the vertical lift, then a heat exchanger should be provided to sub-cool the liquid sufficiently so that the liquid will not flash at this new low pressure established at the inlet of the expansion device.

"For 'Freon-12,' a loss of pressure of approximately .55 p.s.i. for each foot of vertical lift can be used as a rule of thumb for computing vertical lift loss in pressure. However, this does not include any frictional line loss," he cautioned.

"The amount of sub-cooling of the liquid refrigerant will depend a great deal on the design of the condenser, cooling medium being used, and the amount of liquid refrigerant in the bottom of the condenser.

"Consider a typical example of an air conditioning system having a load of 18 tons, and being operated at a 'Freon-12' suction pressure of 37 p.s.i. (40° F. saturation temperature) and a discharge pressure at the machine of 120 p.s.i. There is a vertical lift of 30 ft. from the receiver outlet to the thermostatic expansion valve inlet. Let us suppose that a valve having a capacity of 18 to 20 tons at a 83 (120 - 37) p.s.i. differential is selected.

Loss In Vertical Lift

"In this example, there is a vertical lift of 30 ft. in the liquid line and if we multiply .55 p.s.i. x 30 we get approximately 17 p.s.i. loss due to vertical lift. If the liquid line has been sized with the general recommendation of 3 p.s.i. for frictional loss and 2 p.s.i. drop through the solenoid valve, we find that the pressure drop across the expansion valve is something altogether different than the mere subtraction of suction pressure minus discharge pressure," Schenk said.

"In this example we will also assume a 2 p.s.i. drop in the suction line and 15 p.s.i. drop through distributor and coil. By taking these various pressure drops into consideration, we finally arrive at a pressure drop across the expansion valve of 44 p.s.i. It can readily be seen that the valve selected on the basis of 83 p.s.i. drop across the valve would be too small to produce the desired capacity at 44 p.s.i. drop across the valve.

"Of course, in addition, sufficient

sub-cooling of the liquid refrigerant should be provided to prevent the formation of flash gas in this case, since again the valve is selected for capacity and best performance by handling solid liquid at the inlet of the valve. The necessary amount of sub-cooling in the above case is a minimum of 13° [120 p.s.i. (102° F.) minus 98 p.s.i. (89° F.)].

"The pressure drop between the expansion valve outlet and the evaporator outlet is the most important of the low side pressure losses as far as the valve capacity is concerned," he declared. "Sizable pressure drops are introduced into the low side of systems by the use of undersized evaporator tubing, extreme length of tubing per pass, improper joints, restrictive return bends, and distributor headers of various forms.

"When this pressure drop through the coil is of any consequence, it will reduce the available capacity of the evaporator as well as the expansion valve, unless some means of compensating for it is provided.

Loss In Evaporator

"In explanation of the foregoing statements, let us see what actually happens in an evaporator without appreciable pressure drop as compared to an evaporator where a sizable pressure drop is present.

"Consider a low side system having a negligible pressure drop and operating at an evaporator temperature of 40° F. Assume that the coil is controlled by a thermo valve set to maintain a superheat of 10° at the coil outlet. If the refrigerant is 'Freon-12,' the evaporating pressure corresponding to 40° F. is 37 p.s.i. If the superheat is to be 10°, the desired temperature at the thermo valve remote bulb is 50° F. (40° + 10°).

"Disregarding any temperature difference due to conductivity between the evaporating refrigerant and the thermal charge in the remote bulb, the temperature of the remote bulb will also be 50° F. The saturation pressure corresponding to 50° F. is 46.7 p.s.i. and this will be the pressure in the remote bulb and power assembly. This pressure of 46.7 p.s.i. acts above the diaphragm and tends to open the valve. The suction pressure of 37 p.s.i. acts below the diaphragm and tends to close the valve. This means that, for equilibrium, the valve spring must be set at a compression corresponding to a pressure of (46.7 - 37) or 9.7 p.s.i.

"Now consider the same thermo valve controlling a 'Freon-12' low-side with a pressure drop of 10 p.s.i. from the valve outlet to the coil outlet. In other words, the pressure is 27 p.s.i. or 10 p.s.i. lower than at the valve outlet. However, the pressure of 37 p.s.i. is the pressure acting on the lower side of the diaphragm.

Reaction of Valve

"With the valve spring set at a compression equivalent to a pressure of 9.7 p.s.i., the required pressure above the diaphragm is (37 + 9.7) or 46.7 p.s.i. This pressure corresponds to a saturation temperature of 50° F. It is evident that the refrigerant temperature at the remote bulb must be 50° F. if the valve is to be in equilibrium. But the pressure at this point is only 27 p.s.i. and the corresponding saturation temperature is 28° F.

"Therefore," said Schenk, "a superheat of (50° - 28°) or 22° is required to hold the valve open. This increase in superheat (from 10° to 22°) required to open the valve, reduces the amount of total evaporator surface for the absorption of latent heat of vaporization of the refrigerant."

(Concluded on next page)

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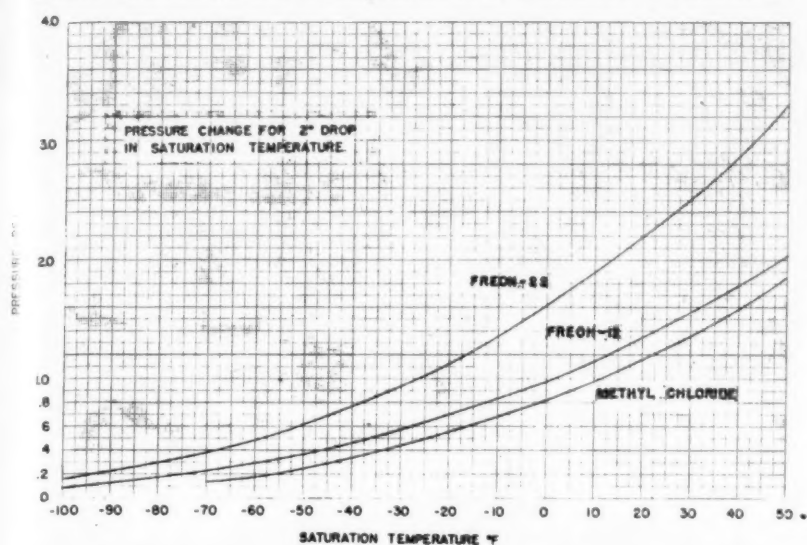
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How Saturation Temperature Affects Pressure



Comparing the pressure change for each 2° drop in saturation temperature, the chart indicates that at low temperature, pressure drop must be kept to a minimum to maintain desired temperatures.

Effects of Pressure Drop on System Shown

(Concluded from preceding page)

erant, because of the increased surface required to produce this superheat.

"It is obvious that the thermostatic valve is being held in a relatively restricted position because the pressure underneath the diaphragm (also at the coil inlet) is higher than the pressure at the remote bulb. Since the pressure drop across the coil, which causes this condition, increases with the load, this restricting effect is increased when the demand on valve capacity is greatest.

"In order to compensate for a pressure drop through the distributor or the evaporator, the expansion valve may be equipped with an external equalizer line connected into the evaporator at a point beyond the greatest pressure drop or to the suction line. The internal equalizer port is then eliminated.

External Equalizer Line

"When the external equalizer connection is made, a pressure approximating the mean evaporator pressure or the pressure at outlet of evaporator depending on the point of equalizer connection is exerted under the diaphragm. The operating pressures on the valve diaphragm are now relatively free from any effect of the pressure drop through the distributor and evaporator, and the valve can respond only to the superheat in the suction gas.

"Referring again to the system previously discussed, consider the same pressure and superheat conditions existing with an external equalizer now installed in the valve. The same pressure drop still exists across the distributor and evaporator.

"The pressure under the diaphragm is now the same as the pressure at the end of the coil or 27 p.s.i. The required pressure above the diaphragm for equilibrium is $27 + 9.7$ or 36.7 p.s.i. This pressure corre-

sponds to a saturation temperature of 40° F. In other words, the remote bulb temperature now required is only 40° F. and, therefore, the superheat required is now 40° - 28° or 12° F. The use of an external equalizer has reduced the superheat from 22° to 12° F.," he explained.

"This change from 10° to 12° in the actual superheat is caused by the change in the pressure temperature characteristics of 'Freon-12' at the lower suction pressure of 27 p.s.i.

"By the use of the external equalizer, it is possible for the thermo valve to provide efficient feeding of the evaporator when a sizable pressure drop exists.

"If the 10 p.s.i. drop is through the evaporator and the coil capacity is reduced because the temperature difference between load and vaporator is reduced, then the use of the external equalizer feature will not completely correct the fault. The proper approach then is to split the coil into more circuits or use larger size coil tubing to reduce the pressure drop through the coil," Schenk advised.

"Pressure drop in evaporators and suction lines has a more direct effect on the capacity of the condensing unit than does pressure drop in the liquid line. Pressure drop in the evaporator is not at all desirable because it adversely affects the performance of the evaporator as well as the condensing unit. Pressure drop in the suction line also directly affects the capacity of the condensing unit.

"In general, for 'Freon-12' the following pressure drops are considered to be the maximum allowable for suction lines:

50° to 25° F. evaporator temperature: 2 to 2½ p.s.i.
25° to 0° F. evaporator temperature: 1 to 1½ p.s.i.
0° to -20° F. evaporator temperature: ½ to 1 p.s.i.

"These, however, are considered to be general recommendations and

special applications can arise where more or less pressure drop can be tolerated," he said.

"If the pressure drop through the suction line is large enough, the reduced suction pressure at the compressor may reduce its capacity below the required tonnage. When this is the case, the size of the suction line must be increased to reduce the pressure drop in this line.

"As an example, if on a commercial installation, such as a walk-in cooler for meat storage, a pressure drop of 5 p.s.i. exists in the suction line, a loss in condensing unit capacity of approximately 12% will be experienced due to this pressure drop.

"At low temperatures, suction line pressure drop is a more serious consideration. If the above example is changed to a frozen food box and the same pressure drop of 5 p.s.i. exists in the suction line, a loss in condensing unit capacity of from 25 to 30% will be experienced. Obviously, pressure drop in the suction line cannot be eliminated, but it can be minimized by the proper choice of line size for the application.

Pressure Change Chart

Fig. 1 will give you some idea of the amount of pressure change that occurs for a 2° change in saturation temperature of several refrigerants. You will notice, for example, that on 'Freon-12' for an evaporator temperature of -100° F. the pressure change for 2° drop in saturation temperature would be only .099 p.s.i. whereas with a 50° F. evaporator temperature the pressure change for 2° drop in saturation temperature is 2.04 p.s.i.

"It is obvious, therefore, for low evaporator temperatures that the

pressure drop through the evaporator must be small, particularly where the temperature difference between the load and the evaporator is in the nature of 10 to 15° F.," Schenk declared.

"If the pressure drop through the evaporator is sufficient to amount to a change in the boiling point of 4° or 5°, it will definitely reduce the temperature difference between the load and the coil and reduce the coil capacity at a given suction pressure at the compressor. Or to put it another way, the compressor would have to operate at a lower suction pressure to produce a temperature difference required between load and evaporator to bring the evaporator up to the desired capacity.

"However, when the compressor is operating at this reduced suction pressure, unfortunately, it also has less capacity. Therefore, a high pressure drop through the coil affects adversely both the performance of the coil and the compressor.

"In the case of 'Freon-22,' more pressure drop can be tolerated than on 'Freon-12' for the same change in degrees, whereas on methyl chloride you cannot tolerate as high a pressure drop as you can on 'Freon-12' for the same number of degrees change. These are characteristics of the refrigerants and are shown merely as a matter of comparison.

"The ASRE Data Book Basic Volume on Refrigeration Fundamentals lists information on sizing of refrigerant lines in Part III, Chapter 16. Multipliers are also given to convert this information for various line sizes and various pressure drops. Additional information is given on pressure drop and line sizing for water, brine, etc.

"The Air Conditioning and Refrigerating Machinery Association is an association of compressor and equipment manufacturers, and they have compiled data known as 'Equipment Standards' of the association. These standards deal with the various pieces of equipment that make up a refrigerating system, but they have also devoted considerable thought to recommendations affecting sizing of refrigerant lines.

"Their book 'Equipment Standards' is available at the price of \$2 a copy. It is broken down by various parts or chapters. The part of the book relating to line sizes is known as Part 5, 'Miscellaneous Standards,' and is available separately at the price of 75 cents per copy.

Data on Line Sizing

"I believe it would be a worthwhile investment for all of you involved with the selecting of line sizes for systems to purchase a copy of at least Part 5, 'Miscellaneous Standards,' although it is possible that perhaps the complete standards book would be valuable to you. Specific information is given regarding sizing ammonia and 'Freon-12' lines.

"In this book you will find a well outlined approach on how to figure the pressure drop in a line of given length and handling a given flow. They also caution that allowance should be made for the use of fittings and valves in the line. For example, they speak of pressure drop in 100 ft. equivalent length of line.

"Now this may be made up of an actual lineal length of 50 ft. of line and the other 50 ft. may be an allowance covering the use of fittings in that line. Therefore, the pressure drop is determined on an equivalent 100-ft. length."

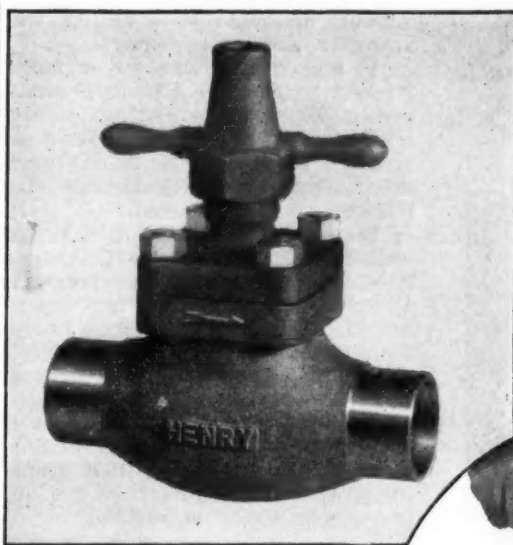
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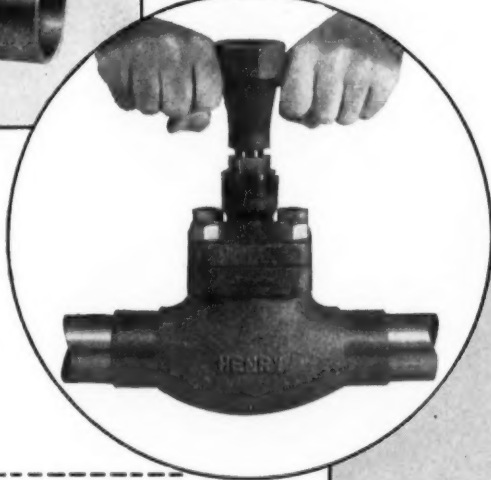
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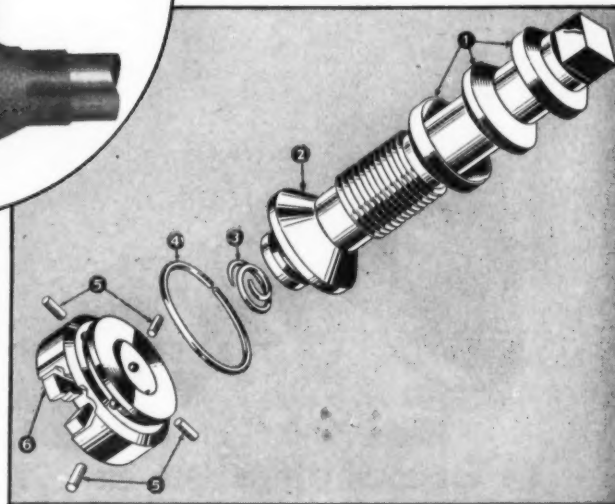


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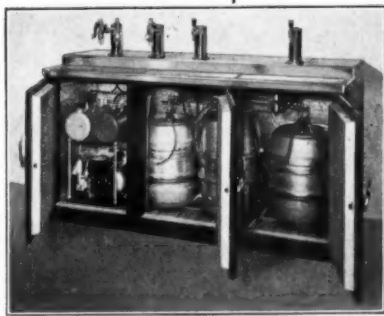
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It's Safety First with UL, Engineer Stresses In Outlining Analysis for Non-Electric Hazards

ST. LOUIS—Examination of refrigeration equipment by Underwriters' Laboratories, Inc., is primarily concerned with safety, and not efficiency and performance except for safety devices, George H. Pope, UL's assistant secretary, emphasized in a talk at the Midwest Refrigeration and Air Conditioning Educational Conference sponsored jointly by the Refrigeration Equipment Manufacturers Association and the Refrigeration Service Engineers Society.

Pope's talk had been prepared by C. C. Fitzsimmons, UL associate engineer.

He pointed out also:

"Hazards to life and property are not caused entirely by faulty electrical components of refrigeration equipment," Pope declared.

"We, at Underwriters' Laboratories, Inc. aware of our responsibilities in safeguarding against hazards, realize as do you servicemen, that any refrigeration system which employs volatile and frequently toxic and flammable fluids may create hazards entirely apart from the electrical system."

UL THINKING SKETCHED

"Consequently, we consider that the inherent hazards introduced in the system due to the characteristics of the refrigerants require equal concern and surveillance with those of electrical origin."

"Before outlining in detail the specific phases of our work which may be of special interest to this RSES group, a brief sketch of the thinking of Underwriters' Laboratories engineers as they analyze refrigeration system for possible hazards, may bring to you a clearer concept of what our listings mean. You can then judge the value of our listings to you and to the safety of the public which is in your hands as well as in ours. In outlining our engineering analysis for the hazards of the equipment, those electrical phases of our work which are not of direct interest to you as refrigeration servicemen are eliminated."

"Fundamentally the non-electric hazards of refrigeration equipment

can be simplified into these basic questions:

"1. Is the refrigerant toxic or flammable, and may it upon release from the system, create a casualty or fire hazard?"

"2. If the refrigerant is toxic or flammable, is the system and its components designed so the danger of refrigerant release during normal operation and/or servicing operations is reduced to an acceptable degree?"

"3. What are the pressure characteristics of the refrigerant?"

"4. Are the pressure vessels which contain the refrigerant designed so as to prevent leakage or bursting under abnormal operating conditions?"

MORE BASIC QUESTIONS

"5. Are the valves well designed to prevent leakage?"

"6. Are the fittings leak-tight and will they resist vibration and season cracking?"

"7. Is the refrigerant tubing of proper material and wall thickness to resist normal rough handling and will it properly receive the fittings when attached?"

"8. Are receivers, strainers, driers, oil separators, and evaporators designed to withstand abnormal though anticipated pressures without leaking or bursting?"

"9. Has the compressor crankcase and seal adequate strength if the low-side pressure builds up?"

"10. Has the system adequate 'pump down' capacity to prevent hydraulic rupture and refrigerant release?"

"11. Are safety devices, requisite to the safe operation of the system, either under abnormal operating conditions or upon exposure to fire, installed?"

"12. If a relief valve, rupture disc, or fusible plug is employed to release pressure, is it of adequate capacity, set to relieve at the proper pressure consistent with the strength of the vessels they protect, reliable in operation, and leak-tight?"

"13. Is an adequate highside cut-out provided to prevent over-pressure in case of water failure? If so, is it

installed without shut-off means between it and the compressor? Is its setting sealed or limited so that a water-conserving owner cannot readily adjust to an extremely high cut-out point? Will it handle the electrical load reliably over long periods without welding the contacts?"

"14. Are the electrical components within a device installed and shielded so that a refrigeration serviceman, however, absent-minded about pulling the disconnect switch, will not suffer injury by accidentally touching a live terminal? More particularly is the owner, who trying to save a service call, chooses to 'pump down' the system, oil the motors, or adjust the controls, exposed to a lethal shock in so doing?"

"15. Are moving parts, that is, fan belts and pulleys, reasonably well safeguarded to prevent accident to the serviceman?"

"16. While this discussion does not involve electrical components specifically, a few warrant mention," Pope added.

"Are the main motor overload coils of suitable rating to prevent premature trip-out and still afford the necessary motor protection? If inherent over-heating protection is provided for motors, has the protective device and motor been tested to establish the safety of the combination?"

"Have starters, relays, highside cutouts, defrost means, thermostats, etc., been tested and found suitable for the electrical loads they carry? Does the system contain quantities of combustible material, air filters, acoustic linings, etc. which will serve as a source of fuel in case of fire?"

2 TYPES OF TESTS

"All of these points are questions in the minds of Underwriters' Laboratories engineers when they are asked to examine a system and express judgment as to the safety of its construction. In many instances, the answers are resolved by testing the assembly and components."

"In others, and these are of more interest to you, the individual components for field installation are tested, as apart from the testing of a complete system. It is on these field installed components that the following is concentrated."

"Underwriters' Laboratories, in its well-known report entitled 'Comparative Life, Fire, and Explosion Hazards of Common Refrigerants' has classified the various refrigerants as to fire and toxicity hazards. These classifications were made as a result of controlled physiological tests employing common refrigerants and the usual guinea pigs. As a result of this work, the use of higher than Group IV refrigerants is prohibited for direct air conditioning systems."

"With the characteristics of the refrigerant known, we require that a listed system be designed and constructed in accordance with the following:

"1. That all materials be impervious to corrosive action of the refrigerant and oil—not assuming vagrant moisture in the system."

"2. That all high-side pressure vessels, such as condensers, receivers, oil separators, etc. shall be tested by Underwriters' Laboratories, Inc. These parts must withstand not less than five times the pressure developed under test in the system under abnormal conditions of operation which may be encountered in the

'Jack the Genius... Solver of Service Problems'



service.

"They are also required to withstand operating conditions of an unusual nature with an adequate safety factor and without danger of rupture. These conditions include failures such as condenser motor failure, refrigerant tube block, water failure, low-side air leak, and others which might occur."

"Water-cooled systems are required to have highside pressure vessels which will withstand at least five times the pressure generated in case of water failure."

"Low-side pressure vessels are required to withstand not less than five times the vapor pressure of the refrigerant at 70° F. This is far in excess of any conceivable pressure to which they will be subjected in service."

"We test pressure vessels hydrostatically until failure, and require that manufacturers do likewise periodically, keeping records which are available to our inspectors under the Reexamination Service."

"In Underwriters' Laboratories well-known green List of Inspected Electrical Equipment, available without charge upon request, you will find the following items listed under the general heading 'Refrigeration Equipment': Refrigerating Machines; Refrigerating Systems; Cabinets, Refrigeration; Compressors and Receivers, Refrigeration; Condensers; Cooling Units; Equalizer Tanks; Fittings; Heat Exchangers; Lamp-holders; Oil Separators; Tubing; Valves; and Miscellaneous Accessories."

LISTING OF COMPONENTS

"It is the listing of the various refrigeration system components which refrigeration service organizations purchase for replacement which is of particular interest to you, rather than the systems which are factory-assembled."

"We'll start with 'compressors.' These may be of the open or hermetic type. Your problem of engineering a suitable replacement pump for a given system may be simplified if you determine that the compressor is listed by Underwriters' Laboratories, Inc. This listing will be evidence to you that the compressor has been designed to meet the strength requirements of our Standards. It will not help you in your main problem of determining whether the pump will do a good job of refrigeration," Pope cautioned.

"The listing of condensers, receivers, driers, separators, and other refrigeration handling components indicates to the serviceman that these components are sufficiently strong

for the purpose intended, that they can be installed with reasonable care, that they are tested for strength by the manufacturer and that they are inspected by Underwriters' Laboratories, Inc."

"Likewise in the case of safety devices, such as fusible plugs, highside cutouts, rupture discs, etc. Fuse plugs are tested for their leak resistance, as well as their release temperature and adequacy of relief. Rupture discs are also checked for release pressure as well as pulsation fatigue."

"Pressure-limiting devices are tested through 100,000 cycles of operation carrying an electrical overload. Thermostats and pressure switches are likewise tested under electric, overload, and endurance tests."

OTHER LISTED ITEMS

"Inherent overheating protective devices are also listed for use with the particular motor with which they are to be used. The tested motor-protector combination which is also periodically tested to check for the adequacy of the motor protection may be found in the list under the caption 'Motor Controllers—Miscellaneous.'"

"Refrigeration valves are also listed. The investigation of valves consists of a determination of the suitability of the disc, packing, and diaphragm to resist leakage, corrosion, and aging. Valves are also required to withstand hydrostatic tests on the body, and repeated operation tests."

"Listed refrigeration fittings are required to withstand hydrostatic and leak tests, season cracking, pull, and vibration tests."

"Magnetic starters which are employed for the control of large motors and which incorporate the motor overload device are investigated under electrical overload, also for endurance and reliability. The overload protective coil is investigated to determine its trip-out point under various normal and abnormal motor loads and is also checked to determine safety under short-circuit conditions."

"Reducing valves or regulators are likewise investigated to determine that in case of overpressure in the low-side due, for instance, to seat burning, the overpressure will not result in throwing parts of the regulator, creating hazard to the operator."

"In our tests of this type of equipment, we block the low-side safety devices which are frequently nullified by unthinking operators, and introduce full cylinder pressure into the low-side of the regulator."

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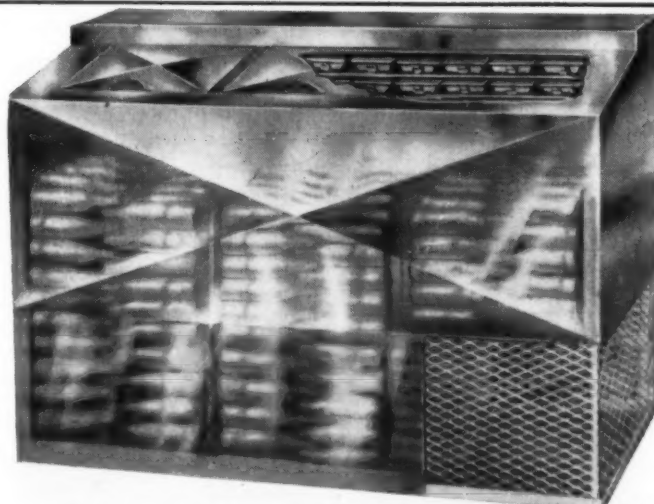


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35,000 Reefers Have Forced Air Cooling; Only 2-3,000 Cars Can Handle Frozen Foods

KANSAS CITY, Mo. — Nearly a third of the 110,000 railroad refrigerator cars in use today are equipped with forced air circulating fans, according to E. A. Gorman, Jr., of the Preco Co. who discussed "Pre-cooling and Rail Transportation of Fruits and Vegetables" at the 37th spring meeting of the American Society of Refrigerating Engineers here.

It was also brought out by Dr. Mary Pennington that there are but 2,000 to 3,000 "reefers" which have 5 to 7 in. of insulation for low temperature haulage of frozen foods.

"In fact," she commented, "in March of this year there was such a shortage of these low temperature cars to transport frozen orange juice concentrate from Florida that the Interstate Commerce Commission is investigating the problem."

"Natural convection," Gorman reminded the group, "has been depended upon in railroad refrigeration since the first reefer was developed. In 1936 the first forced air circulating car went into use. Now there are 35,000 reefers which are equipped with forced circulation fans driven by friction off the car wheels."

Heat of respiration in most fruits and vegetable has made pre-cooling a virtual necessity if the reefers are to deliver their loads in satisfactory condition, he also pointed out.

"However," he emphasized, "the refrigeration requirement for pre-cooling is high because of the initial high load combined with the fact that little time is available for pre-cooling."

"For example, the cooling effected by the melting of 1,000 lbs. of ice will drop the temperature of a 30,000-lb. load of grapes 3.4° F. A carload of cantaloupes weighing 23,000 lbs. will be lowered 4.3° per 1,000 lbs. of ice melted."

The several methods of pre-cooling reefer loads—"all of which can be effective if properly used"—were outlined as follows:

1. Portable reefer pre-cooling fans.
2. Permanent installation of fans.
3. Trackside brine pre-coolers.
4. Mechanical refrigeration units mounted on trucks.

The first two methods, he said, employ "reverse circulation" so that the top of the load cools first instead of the bottom of the load.

"Adoption of car pre-cooling," he added, "has enhanced the shipping of more perishable fruits and vegetables."

Besides the forced circulation system featured in today's modern railroad reefer, the car has several other improvements, according to Gorman. These include: standardized inside door loading specifications;

4½-in. insulation in floor and roof, 4-in. in sides and ends; adjustable ice grates; 10,000 to 11,500-lb. ice capacity; improved draft gear and trucks, and side-wall flues.

Use of forced air circulation is helpful during winter, too, he added, since higher floor temperatures can be maintained without overheating the top of the load.

As for mechanical refrigeration of railroad reefers, experiments on which have been conducted for the past 15 years, this presents several problems, he declared. Perhaps the most important is the economic question, Gorman indicated saying that "the average reefer averages 13.7 loads per year, and only some of these loads are hauled under refrigeration."

Commenting on the talk, C. F. Holske, former ASRE president, questioned whether top-icing might not give considerable more improvement than obtained with forced air circulation.

"The reefer cars we're talking about are old-fashioned side-icers. It's obvious that you can't obtain best circulation with natural convection. Forced air circulation helps, but how much?" he asked. "The Canadian Pacific has experimented with top-icing, I believe. What were the results?"

Gorman explained that "the overhead bunker car was first used in Europe, later adopted by the Canadians, and still later brought to the United States. In Canada these cars were used mostly for frozen products in a cold temperature zone. In the United States attempts made with fresh fruits and vegetables showed that the big problem is the heat of respiration regardless of where the ice is located. Top layers in the overhead bunker cars don't get any cooler than end bunker cars using forced air. You do increase the air circulation if salt is added to ice in the overhead car."

The point that the radial blade fans employed in the forced air reefers provide the same direction of airflow regardless of the direction of travel by the car (and thus the fans), and, therefore, must be low in efficiency and must increase the power required to haul the reefer train was also brought up by Ed Simons.

"Fan efficiency is very low," Gorman admitted, "but it is made so purposely. Design of the housing leaves plenty of room for natural convection when the reefer is standing idle."

As for increased drag on the locomotive, he declared that to his knowledge this had presented no problem.

Engineers See How To Replace RR Unit



Following his talk before the ASRE in Kansas City on mechanical refrigeration for transport, Michael Green (right), sales manager of U. S. Thermo Control, shows R. H. Lock, Lou Snell, and Paul Christensen how Thermo-King railroad units may be readily replaced.

Cornell Hotel Ad. School Given Ice Cream Cabinets

ITHACA, N. Y.—The School of Hotel Administration at Cornell university here was recently enriched with a gift of brand new ice cream cabinets by Ace Cabinet Corp.

Milton Herzer, an executive of Ace Cabinet, made the gift in behalf of the company in honor of the dedication of Statler Hall, the new building erected at Cornell.

Tesco Handles Kelvinator Repair Parts, Comm. Units

NEW YORK CITY—Appointment of Tesco Distributors of Newark, N. J., as distributor of Kelvinator repair parts and commercial equipment was announced by Keith L. Saunders, manager of Kelvinator's New York zone office.

Saunders said Tesco will supply dealers, servicemen, and users in northern New Jersey.

Denver Firm To Service Wyo. Feed Storage Coolers

CHEYENNE, Wyo.—In keeping with a new policy adopted by the State Game and Fish Commission for maintaining the walk-in coolers recently installed at state hatcheries and rearing stations for feed storage, a \$1,286 contract has been awarded to B. & M. Refrigeration Co. of Denver for repair and maintenance of all refrigeration units operated by the commission.

State Fish Warden A. F. C. Greene explained that the commission decided it would be an economy move to lump together all the repair and maintenance work in one contract.

This will eliminate the need for the commission to hire or employ the necessary equipment and trained personnel. The Denver firm was one of 14 refrigeration service company bidders on the Wyoming maintenance contract.

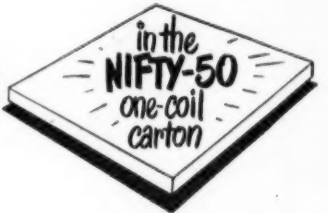
After World War II, the walk-in type refrigerators were installed in the various state fish hatcheries and rearing stations for storage of horse meat and other perishable products used for fish food.

Under terms of the new contract, the Denver company will make quarterly maintenance checks at all stations. Necessary repairs and routine maintenance procedure will be handled at that time by the contractor.

Izard's Air Conditioned

ELMIRA, N. Y.—Izard's, Elmira's largest department store, has just completed installation of a complete new air conditioning system.

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But the new carton is only one of the many reasons for specifying Dryseal by name when you order from your distributor. For you really can do things with this tube.

Intricate bends can be made by hand with little effort. Dryseal can be flared for compression fittings without splitting. Its ductility and soft temper make sure of that.

Another important feature is the absence of moisture in Dryseal. A special, precise, mechanical double-crimp seal made at each end of the tube when it is manufactured keeps the inside completely bone-dry and free from dirt. What's more, this seal is made in such a way that it does not change the diameter of the tube. This makes it possible to pass the tube through any opening large enough for the tube itself.

Dryseal is now made to new, more economical dimensional standards, with tube sizes from 1/8" to 3/4" O.D.

Those are the reasons why, the next time you order refrigeration tube from your distributor, it will be to your advantage to specify Dryseal. He has it and will deliver promptly.

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Refrigeration Problems and their Solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Formula Suggested For Belt Length

A reader, Guy Thompson of Toccoa, Ga., sends in a formula for determining the length of a belt if the diameters of the two pulleys and the distance from center to center is known. He was given this formula, and he wishes to know whether it is correct. The formula that he quoted was:

$$\text{Length of the belt is:} \\ 2 \times (D + d) + 2 \times C$$

where D and d are the diameters of the two pulleys respectively, and C is the distance between the centers of the two shafts.

EXAMPLE

For example, let us take two pulleys of 10 and 4-in. diameters, on shafts whose centers are 20 in. apart, as illustrated in Fig. 1. Then if we substitute in the above formula we get:

Length of belt is:
2 times (10 plus 4) plus 2 times 20
or, $2 \times 14 + 2 \times 20$
which equals 68 in. as the belt length.

Accurate calculation, which gets a little involved and need not be re-

peated here, arrives at an answer of 62.7 in., from which the above formula differs over 5 in. To be of much practical use, the answer should be accurate to within less than one-half an inch.

The formula can be sufficiently accurate for most field uses with small machines, if, instead of multiplying the sum of the two diameters, by 2, we multiply it by 1.6; or if you do not like to use decimals, 1 1/2 can be used instead of 1.6.

The formula now becomes:

$$1.6 \times (D + d) + 2 \times C$$

So with the above pulleys and center distance, the belt length now calculates: $1.6 \times (10 + 4) + 2 \times 20$ or 62.4 in.

The accuracy of this formula depends somewhat on the difference in diameters of the pulleys. If the two pulleys were about the same diameter, the formula would be much more accurate than if the motor pulley was a great deal smaller than the compressor pulley. That is, as the ratio of diameters increases, the accuracy of this formula decreases.

Another source of inaccuracy in this formula is the fact that it uses outside diameters of the motor and compressor pulleys, rather than their "pitch" diameters, which are more accurate in the case of pulleys using V belts.

A layout draftsman or machine designer would use pitch diameters and he would calculate the belt length by a somewhat more accurate formula, but this formula, using the factor 1.6 instead of 2, is accurate enough for ordinary field usage on small machines on which the diameter of the compressor pulley is up to four or five times as much as that of the motor pulley.

DALTON'S LAW BASED ON ABSOLUTE PRESSURE; NOT GAUGE PRESSURE

Another Georgian, R. M. Salley, an instructor in a trade school in Atlanta, has called our attention to an inaccuracy in the recent article on using CO₂ to build up pressure in a system to more easily and accurately find leaks. We used gauge pressures in the example, and in so doing allowed an error of about 15 p.s.i. to get in.

Salley very correctly reminds us that Dalton's law is based on absolute pressures, not on gauge pressures. Therefore, the total pressure in the example should have been 165 p.s.i.g. instead of 150 lbs.

DO NOT MIX AMMONIA AND CO₂

While we are confessing our derelictions we should mention that CO₂

should not be put in with ammonia to raise the pressure. Ammonia and CO₂ react to form solid compounds that may, and probably would, cause trouble, especially at the compressor valves. CO₂ is often used in testing ammonia systems for leaks, but the ammonia is pumped out before the CO₂ is put in. The testing is then done by using soap-water.

The above-mentioned article may have given the impression that CO₂ could be put in with ammonia. We are indebted to Vaughn Russell of Seattle, Wash., for calling this to our attention.

2 New Booklets Give Data On Maurey V-Belt Lines

CHICAGO—Two new booklets recently released by Maurey Mfg. Corp. here, give detailed information on the line of "Mor-Grip" fractional horsepower and multiple V-belts made to Maurey specifications by "one of the foremost rubber manufacturers."

Bulletin FHP-101 describes the line of Mor-Grip V-belts for fractional horsepower, giving complete comparative details, interchangeable data, and price information on "3L" FO section, "4L" FA section, and "5L" FB section sizes.

Bulletin No. MV-201 describes Mor-Grip multiple V-belts and provides a complete price list and comparison table for "A" section, "B" section, "C" section, "D" section, and "E" section sizes as well as similar data on special sizes for replacement only.

Both booklets are obtainable by addressing requests to Maurey Mfg. Corp., V-Belt Div., 2915 S. Wabash Ave., Chicago 16.

Wiring Harness Trade-Marks Granted to United Mfg.

MILWAUKEE—The United States Patent Office has just advised the registration of the trade-mark "Nu-Blok" by United Mfg. & Service Co., here, engineer and manufacturer of "Unilectric" electric wiring systems and harnesses.

The "Nu-Blok" and "Nu-Blok, Jr." names have been used to describe specially designed junction blocks used in wiring systems to contain and splice several types of leads. They feature new "Short-proof" splice protection, built-in strain relief, and easy connection and disconnection in product assembly and servicing. The "Junior" model is made with a receptacle for standard attachment cap, and both can be furnished with extra plug connection leads.

Other trade names recently adopted by United Mfg. & Service Co. include "Unilectric" which describes their complete wiring systems and sub-assemblies, and "Unitwire," the name of a special test cord used by service engineers for electrical testing of refrigeration motors, switches, capacitors, wiring, and motor winding.

Dimensions Needed To Determine Belt Length

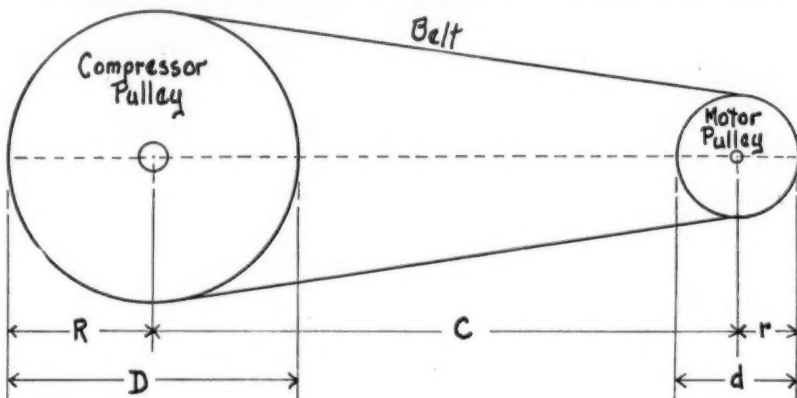
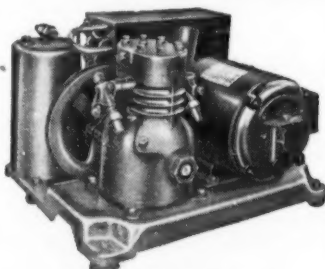


Fig. 1 shows the dimensions needed to calculate the belt length from the diameters of the pulleys and the center distances between pulleys.

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Ratings you can depend on. Quality that is field proven in every type of installation from neighborhood store to giant super-market. Temperature range from -60°F to normal refrigeration. Special units for unusual jobs. Nation-wide parts service. When you are partners with the LEHIGH TEAM—you've got everything! We are proud to offer the following for IMMEDIATE DELIVERY.

PACKAGED UNITS



1/2 H.P. Lehigh BLU-COLD
PACKAGED TYPE UNIT

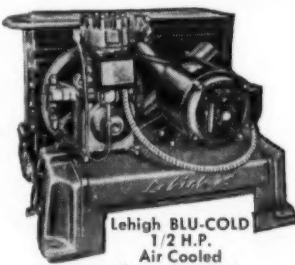
For small mounting dimensions and self-contained use. Heavy duty construction with MORE CAPACITY PER H.P.

1/4-1/3-1/2 H.P.
2 types now available
F-12 & F-22

(F-22 models can be used for evaporative temperatures to -60°F)

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★ AIR & WATER COOLED ★ Comb. AIR-WATER COOLED



Lehigh BLU-COLD
1/2 H.P.
Air Cooled
Heavy Duty Unit

Built to carry a heavy load and give years of trouble-free service.

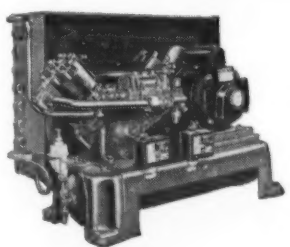
AIR COOLED
1/3 to 3 H.P.

WATER COOLED
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AIR-WATER COOLED
1/2 to 3 H.P.

Lehigh AIR-WATER Units are getting increasingly popular and do a BETTER job in many places. Ask for special bulletins.

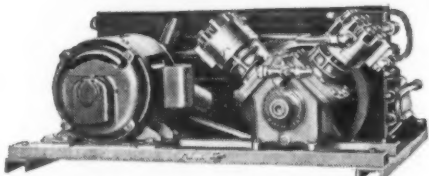
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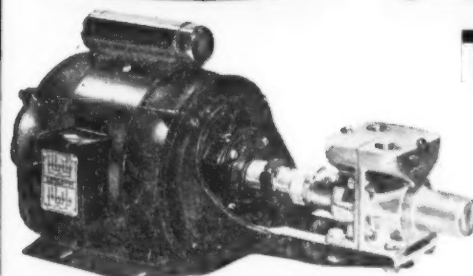
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More New Items Than Forecast at Mart--

(Concluded from Page 1, Column 5) ft. capacity lists at \$259.50 and has two crisper pans, deluxe shelves and trim. Model WH-9D with 9 cu. ft. capacity lists at \$279.95 and has two crispers, white porcelain meat keeper, and dry storage compartment in the bottom.

Models with across-the-top freezer evaporators are the WH-8MD with 7.5 cu. ft. capacity listing at \$299.95, and the WH-9MD with 8.2 cu. ft. capacity listing at \$339.95. Latter model has the double crisper and dry storage compartment.

Three freezer models in the Whiting line include the model WF-2700 with 17 cu. ft. capacity listing at \$499.50; the model WF-2200 with 12 cu. ft. capacity listing at \$399.50; and the model WF-1800 with 8 cu. ft. capacity listing at \$309.50. The two larger freezers are two-compartment jobs. Models WF-2700 and WF-1800 have Santocel insulation and the model WF-2200 is insulated with Fiberglas. The largest model has two wire baskets.

Whiting Room Cooler

The Whiting room air conditioner, which carries a list price of \$199.95, has 6,000 B.t.u. rating with a 1/2-hp. Tecumseh or Universal Cooler hermetic unit. Exclusive features claimed are complete removal of condensed moisture from the path of the conditioned air, design which puts the compressor and motor outside the conditioned room, and low noise level because moving parts are outside the room.

Also, the part of the conditioner inside the room is only slightly more than one foot square (14 in. high, 13 in. wide, 12 in. deep). Complete unit weighs slightly over 100 lbs. Adjustable filler strips make it possible to fit the unit into any conventional window, the manufacturer states. Evaporator is the Peerless "pie plate" type. Both compressor and condenser are suspended outside the room.

The washer in the Whiting line is the conventional wringer type, with double-tub design and high speed washing action.

Frigidaire Price Changes

Some price changes made the news in Frigidaire's space at the Mart.

While the price reductions were not being "advertised" in the Frigidaire showing, it was learned that the Master 76 had been reduced \$5 to \$229.75; the MM 76P was reduced \$5 to \$254.75; and the big ML 171 double-door model was reduced from \$617.75 to \$589.75.

Price reductions were made on three home freezer models. A 9-cu. ft. model now carries a suggested cash price of \$299.75, a reduction of \$30; a 12-cu. ft. model is priced at \$369.75, also \$30 less; and an 18-cu. ft. model at \$479.75, \$20 less than it was priced before.

Frigidaire's automatic washer model WL-60 has been reduced in price from \$299.75 to \$269.75.

New L & H Refrigerators

Two new refrigerators have been added to the L & H (Lindemann & Hoverson) line. Both are across-the-top type evaporator models, a 9-cu. ft. job at \$299.95, and a 7 1/2-cu. ft. model at \$229.95. The 9-cu. ft. model has several special features, including a double crisper.

Home freezer models in the L & H line now include an 18-cu. ft. model at \$469.95; a 12-cu. ft. model at \$369.95; and a 9-cu. ft. model at \$279.95.

I-H Freezer, Conditioners

International Harvester showed a new 7-cu. ft. model 70 home freezer, priced at \$229.95, in its space at the Furniture Mart, and also showed the two room cooler models which it is putting out on virtually a field-test basis this year.

It was indicated that two other freezer models would be introduced in the near future.

There are more than 17 1/2 sq. ft. of sub-zero fast-freezing surface in the 7-cu. ft. freezer. This is made possible by the fact that freezing coils pass entirely around the inner liner and under the entire liner floor.

The inner floor is raised so home-makers can reach any part of the interior easily without stretching. The space under the inner floor houses the refrigerating unit and condensing mechanism. Thus there is no need of a separate housing unit.

The construction of the new freezer

eliminates the use of a fan and does away with noise and vibration. A series of condenser coils are welded to the inner surface of the outer shell.

The closed lid forms an extra work table in the kitchen. The refrigerator-type lid-handle is self-latching and the lid, because it is spring-counterbalanced, remains open without any obstructing braces.

International Harvester's "Frost-Lok" breaker strip provides shelf space where it's needed, and securely seals the freezer insulating material against moisture.

A recessed base provides comfortable toe room. It also serves as an air intake for the refrigerating mechanism. A metal compartment divider is firmly anchored in place. It keeps food packages neatly stacked, yet may easily be removed for cleaning.

Model 70 also includes a steel wire basket for storing frozen food packages near the top of the freezer.

The two present I-H room air conditioners are the model W-55, with 5,500 B.t.u. per hour capacity retailing at \$299.95; and the model W-85, with 8,500 B.t.u. per hour capacity retailing at \$359.95.

Cabinet dimensions for both models are 26 1/2 in. wide, 30 1/2 in. deep, and 14 1/2 in. high. Special features include filters, evacuation damper, and drain troughs. A special exhaust device permits operation of the unit as a room exhaust apparatus.

Cabinets are attractively styled, the steel cabinet being finished in silver-sand colored metallic enamel, trimmed in satin-finish chrome. They have been distributed on a very limited basis this year, some metropolitan areas getting only 10 to 12, but it is expected that I-H will go into high production on the models next year.

New Gibson Line Models

A household refrigerator model and a new home freezer model were introduced by Gibson Refrigerator Co. at the Mart.

The new refrigerator model is the G-820, which replaces the model 800. It will list at \$239.95. Extra features include an extra half shelf, deluxe shelf, crisper, and glass door on the across-the-top type freezer evaporator.

New home freezer model is the HF-1890, and 18-cu. ft. model listing at \$489.95, or \$10 less than the 15-cu. ft. model it replaces. It has a special 2 1/2-cu. ft. freezing compartment, and 15 1/2-cu. ft. of frozen storage. The freezing compartment is fitted with a stainless steel lid, making it more usable as a "counter top" for wire baskets, etc. The price of the freezer also includes a \$200 insurance policy on the food contents.

Other features include locks on both compartments, four wire baskets, lighted interior, and temperature control adjustment at the front of the freezer.

Marquette Laundry Line

A new complete line of laundry equipment was being introduced by Marquette Appliances to round out its appliance line, which has included refrigerators, home freezers, ranges, and water heaters.

The laundry equipment line will include three wringer-type washers, two driers, and an ironer, it was announced.

Four Ben-Hur Freezers

Ben-Hur showed four new home freezer models at the Mart, marking some changes in sizes. The distinctive Ben-Hur blue color trim and many previous features are retained in the new models, and some new features added.

Separate freezing compartments are now standard on every model. New freezing coil design includes wrap-around coil on all walls, and on the bottom of the freezing compartment. "Freon-22" is used as the refrigerant in the system.

Models in the line include model 2051, a 20-cu. ft. model with double lid; model 1651 with 16 cu. ft. capacity; model 1251 with 12.5 cu. ft. capacity; and model 851 with 8.5 cu. ft. capacity.

New models are more compact than former models, it is pointed out, the new 20-cu. ft. model being only 76 in. wide as compared with the 81-in. width of a former 18.5-cu. ft. model. One reason for this is the use of new "super-dense" Fiberglas insulation.

Other features include interior lights in lids, handier food baskets, tamperproof cold control, and "Quick-Sight" temperature indicator. Every unit carries an "R.O.P." card, a replica of performance on a Bristol recording thermometer chart, made in a 12-hour factory test in a 100° F. room.

Westinghouse Additions

The news from the Westinghouse appliance division was the introduction of a new range, the combination refrigerator-and-upright freezer ensemble, and price reductions on two refrigerator models.

The new deluxe "Commander" range model is available as a single or double-oven model and it features a new fast heating super Corox surface unit on which a breakfast of bacon and eggs can be cooked within 3 minutes. Cooling platform and control panel are finished in a single-coat titanium porcelain enamel.

The new range will sell at suggested retail prices of \$329.95 for the single-oven model, and \$369.95 for the double-oven model.

The refrigerator-upright freezer ensemble consists of the 7-cu. ft. refrigerator and the 6-cu. ft. home freezer side-by-side, providing 13 cu. ft. of storage in a space 57 in. wide. Ensemble sells for \$459.

Refrigerator price changes include the DA-7, reduced to \$219.95 from \$234.95; and the SA-7, reduced to \$209.95 from \$214.95.

Crosley Freezer, Range

Crosley will apparently bring out several new lines later this summer, apparently following the trend it started last year of getting its lines out by early fall.

A new electric range and a new home freezer were shown at the mart. The new freezer, model CF-16, has 16.1-cu. ft. capacity and lists at \$489.95. A chest model 76 in. wide, it has double lids, double locks, baskets and dividers, and an exclusive feature in the "Shelvatrays," one designed to hold bakery goods and the others leftovers in six freezer jars. Cold control is at the front and accessible, and a warning light is included as part of the escutcheon plate.

The new range, to list at \$249.95, is a custom model with three surface units and a deepwell cooker. It has clock and automatic timer, and seven-speed switches. Other features include a self-sealing door and three storage drawers.

In range promotion Crosley is putting strong emphasis on its barbecue attachment, with which it is claimed to barbecue fowl in half of ordinary cooking time. Easily attached and removed (less than 2 minutes), it lists at \$24.95, but will probably be used widely in promotion work.

Remington 'Leader' Line

In addition to its complete line of window and console type room air conditioners, Remington Air Conditioning Division of Remington Corp. introduced, in its space in the Merchandise Mart, a new "leader model" line of console conditioners, and an "Air Pilot" line of window ventilators.

The "Leader" models offer versatility of application and low cost, declares Remington's sales manager E. A. Bonneville. Applications are of three general types: (1) within conditioned spaces where decorative finish is secondary to high cooling power and low cost (group offices, small shops, etc.); (2) within conditioned spaces where a particular decorative scheme is to be carried out in the form of custom-built enclosures; and (3) where the air conditioner is to be installed remote from the conditioned space, and connected to it by air ducts (a basement installation to cool a living room, or a store-room installation to cool an office).

Discharge and return air grilles of all Leader models can be removed to facilitate the application of ducts, where required. The evaporator fans, centrifugal type, are direct motor driven. Thus, a unique method, other than the use of a variable pitch pulley, had to be employed to increase the discharge pressure of the fans as needed to maintain full air volume where ducts were used.

Method used to increase the static pressure of the evaporator fans is to replace the 6-pole fan motor with an interchangeable 4-pole type, which can easily be done in the field. With the 6-pole motor, evaporator fan speed is about 1,050 r.p.m. The use of the companion 4-pole motor in-

creases this to 1,500 r.p.m., assuring full air volume under external static pressures up to 0.40 in. of water.

All Leader models are built in the same steel chassis, the over-all dimensions of which are 34 1/2 in. wide by 19 1/2 in. deep, by 37 1/2 in. high. Prices are as follows:

Model	Top Rating B.t.u./hr.	List Price
C10 —air cooled	11,600	\$565.00
C10W—water cooled	12,800	635.00
C12 —air cooled	15,500	745.00
C12W—water cooled	17,000	808.50

The "Air Pilot" ventilator exhausts or circulates air by a simple adjustment of the grilles. A filter is provided for air cleaning purposes. It will fit any 30-in. wide double-hung window and larger. Positive window and unit seal is provided.

Kalamazoo Changes

Kalamazoo Stove will have a brand new distribution policy, and will also expand its appliance lines, it is being announced at the Marts.

Details on the new policies will be outlined in a future issue of the NEWS.

Officials of the Deepfreeze Division of Motor Products spent part of the first day at the Mart, then hurried away to a convention at which plans will be set for new lines and sales programs for 1951.

One new appliance model was introduced by Deepfreeze. A new double-oven range, the model RE-1, will retail at \$349.95. It has four surface units, and seven-heat surface unit controls.

Amana In New Spot

Amana was host to visitors in its new quarters in the Merchandise Mart. No new products were shown, but there was a full display of Amana freezers and refrigerator-freezer combinations. Company officials report that the most popular model in the line is the 18-cu. ft. model 18A upright freezer.

Monitor's 'Prestomat'

A model of the new "Prestomat" washer which Monitor Equipment Corp. will introduce soon, was shown at the Mart. The new washer uses the same basic principle as the "Aerator" model which Monitor has distributed, but has a water extracting feature added.

Samples will go to distributors in July, and some department store promotions will start in August, according to P. B. Zimmerman, Monitor vice president.

Kelvinator Freezers

New products in the Kelvinator and Leonard space were the recently introduced home freezers, which have been described in a recent issue of the NEWS. Emphasis in sample promotional refrigerator displays on the Kelvinator and Leonard lines was on the space-saving features of the cabinet design.

Admiral and General Electric did not show any new products in the major appliance lines, and were concentrating attention on promotion plans.

Hotpoint's 1950 Lines

New models of refrigerators, clothes washers, water heater, and dishwasher-sink—all introduced since the January markets—were shown by Hotpoint.

Featured among the new refrigerators were the "Super-Stor" combination refrigerator-freezers in 8.7 and 10.6 cu. ft. sizes. These models have separate doors to independently insulated freezing and refrigeration compartments. The line now includes 13 refrigerators, and 3 home freezers.

The 1950 automatic dishwasher-sink on display for the first time is claimed to be the first to have a high backsplash with built-in soap compartments and faucet assembly. A new faucet, mounted on the backsplash to give more room on the sink surface, is operated with a single lever.

Also sharing the spotlight were the new water heater with "Magic Dial" for selecting temperatures, and the new 1950 automatic clothes washer, with larger top opening and 3-zone agitator.

New I-H Outlet Opens

CHARLESTON, S. C.—Featuring a complete line of I-H refrigerators and home freezers, the McCormick Farm Equipment Store of the International Harvester Co. held its formal opening here June 15. Harvey Varner, Jr., is manager of the store.

Jack Lee Gets New Westinghouse Post

MANSFIELD, Ohio—G. H. Meilinger, manager of the household refrigeration department of the Westinghouse Electric appliance division, has announced the appointment of Jack D. Lee to the refrigeration sales department.

Lee will be responsible for increasing the scope of promotional activities for the Westinghouse line of refrigerators and home freezers. He will report to J. J. Anderson, merchandise manager of the department.



In response to hundreds of requests from AIR CONDITIONING & REFRIGERATION NEWS subscribers, the conductor of its "Inside Dope" column has collected and grouped his best "Stories of the Week." They are now available in convenient book-form for your reading and working pleasure. The book is entitled: "You'll Love This One."

Everyone will enjoy reading this book, we hope, but for the salesman—and for anyone who may be called upon to "say a few words" at a meeting—it should have special appeal.

Here's why: this book of good stories you can tell is printed on thin paper, bound in flexible leatherette, and designed to fit neatly into your inside coat pocket.

While waiting in an ante-room to see Mr. Bigdome, the sales representative can thumb through it and pick out four or five pertinent jokes which are guaranteed to put his prospect in a good mood.

The man about to make a speech—or one who figures he may be asked to rise and shine extemporaneously—can consult it surreptitiously while the toastmaster is doing his stuff. Although it's jam-packed with grand tales, it isn't bulky. Rather, it's unobtrusive. Looks more like a leather wallet than a book.

You can be the life of the party if you've memorized some of the anecdotes in this book. Everybody loves a good story well told—and all the jokes in this book have been tested on tough audiences, both large and intimate, by the author.

Within its 236 thin-paper pages more than 200 sure-fire laughs are presented. You can use it profitably, and so can your friends. It's handsomely turned out, and will make an appreciated Christmas present.

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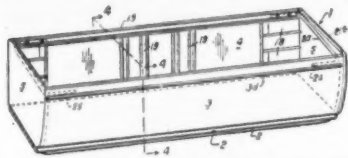
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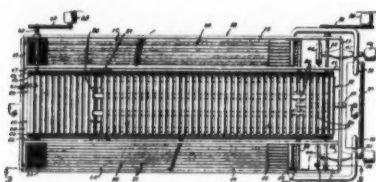
Week of January 17
(Continued)

2,494,703. REFRIGERATED MERCHANDISE DISPLAY CASE OR THE LIKE. David J. Grelling, Kendallville, Ind., assignor to McCray Refrigerator Co., Kendallville, Ind., a corporation of Indiana. Application April 1, 1948, Serial No. 18,366. 11 Claims. (Cl. 312-116.)



1. In a case of the class described, a rectangular pan-shaped bottom section having a surrounding top edge portion with outwardly projecting flange, front and rear sections having lower edge portions engaging over and at the inner side of said bottom edge portions and rigidly attached thereto, longitudinally extending reinforcements at the inner upper edge portions of said front and rear sections rigidly attached thereto and forming channels with their ends open at the ends of said sections, opposing end sections seating on the top edge portions at the ends of said bottom section and having inwardly extending side edge flanges lapping the adjacent end edges of the side sections and rigidly attached thereto, and a U-shaped reinforcing bar rigidly attached at its loop portion to the inner side of each end section crosswise thereof and near its upper edge with its legs projecting inwardly therefrom and telescoping within and rigidly secured to the adjacent open ends of the respective channelled side reinforcements to cooperate therewith and with the bottom, side and end sections to produce a hollow case that is highly resistant to twisting and distorting strains.

2,494,864. CAN COOLING MACHINE. Harry E. Erickson, Los Angeles, Calif., assignor to Cal Grove Products Co., Los Angeles, Calif., a partnership. Application Nov. 18, 1946, Serial No. 710,637. 15 Claims. (Cl. 62-104.)

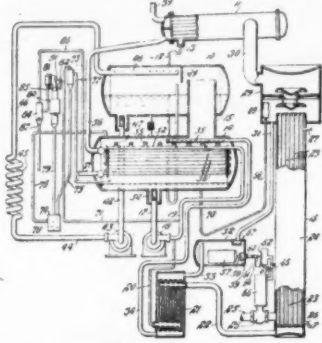


2. A canned goods cooling machine comprising a brine tank, refrigerant cooling coils in the tank, means for circulating brine around the coils and a conveyor incorporating a combined can agitator and can drive in said tank and comprising horizontally disposed endless belt means having pulleys therefor at opposite ends, an idler shaft for one end of the belt means and a drive shaft for the other end of the belt means, said drive shaft extending laterally from said tank, a pair of endless chains and a sprocket for one end of each rotatably mounted on the pulley drive shaft, the other ends of the chains being located at an end of the tank remote from the drive shaft and above the level of brine therein, a pair of sprockets for the last ends of the respective chains and a horizontal conveyor drive shaft for said last sprockets extending from the tank, horizontal parallel rollers extending between the chains, a part at least of the rollers in the upper lay of the chains being in frictional engagement with the belts and rotated by movement of the belts while the chains and rollers are being advanced.

2,494,972. ABSORPTION REFRIGERATING SYSTEM, INCLUDING A PURGE ARRANGEMENT. Albert B. Thomas, deceased, late of Evansville, Ind., by The National City Bank, administrator, Evansville, Ind., and Per Edberg, Evansville, Ind., assignors to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Oct. 25, 1944, Serial No. 560,215. 20 Claims. (Cl. 62-119.)

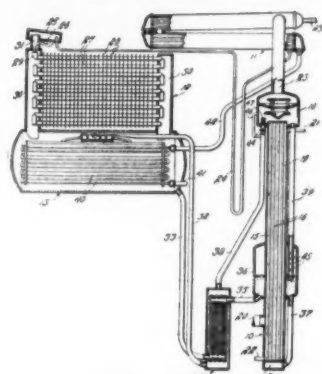
1. In an absorption refrigeration system having a plurality of elements including an absorber interconnected to provide a closed circuit for circulating refrigerant and absorption solution and in which non-condensable gases may accumulate, an

auxiliary loop-circuit having a pump for continuously recirculating the absorption solution in the absorber, and a Venturi



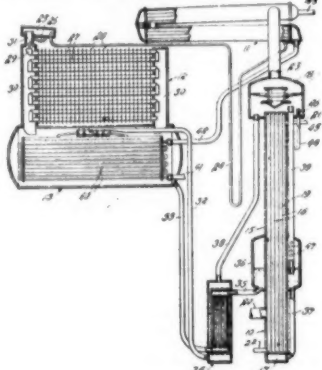
device connected to one of the elements of the system and utilizing absorption solution from the auxiliary loop-circuit for withdrawing non-condensable gases therefrom.

2,494,977. REFRIGERATION. Eugene P. Whitlow, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application April 4, 1947, Serial No. 739,273. 6 Claims. (Cl. 62-119.)



1. An absorption refrigerating system including a generator, a vapor separator, a condenser, an evaporator, an absorber, means for maintaining a constant reaction head on the generator and conduits interconnecting said elements for flow of a refrigerating medium and an absorption solution, said generator including means for lifting absorption solution into the vapor separator for flow therefrom through one of the above connecting conduits into the absorber, an orifice in said last-named conduit for metering the flow of absorption solution delivered to the absorber, and a by-pass connection between said vapor separator and said generator for returning to the generator any excess of absorption solution lifted into the vapor separator beyond that delivered to the absorber.

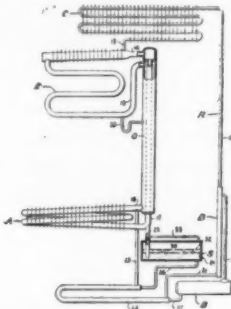
2,494,978. REFRIGERATION. Lowell McNeely, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application April 4, 1947, Serial No. 739,298. 8 Claims. (Cl. 62-119.)



1. An absorption refrigerating system comprising a generator, a vapor separator, a condenser, an evaporator, an absorber and conduits interconnecting said elements for flow of working media there-through, said generator including means for pumping absorption solution into said vapor separator, said interconnecting conduits including means connecting said vapor separator and said absorber for conveying absorption solution from the former to the latter at varying rates of flow, and means for returning absorption solution pumped into the vapor separator to the generator at a constant rate of flow.

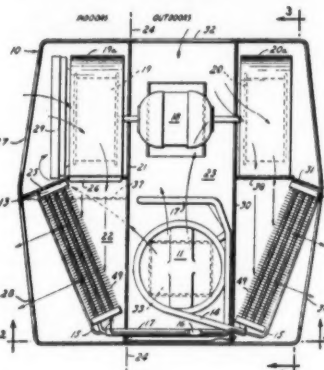
2,494,989. REGULATING PRESSURES IN AN ABSORPTION REFRIGERATING

SYSTEM IN ACCORDANCE WITH AMBIENT TEMPERATURES. Curtis C. Coons, North Canton, Ohio, assignor to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application March 27, 1947, Serial No. 737,547. 11 Claims. (Cl. 62-119.5.)



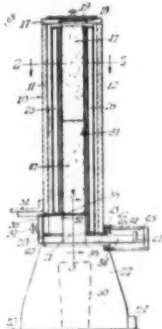
3. Absorption refrigerating apparatus including an evaporator and an absorber connected to form a circuit for inert gas therethrough and therebetween, a generator, a condenser connected to receive refrigerant vapor from said condenser and to supply refrigerant liquid to said evaporator, an absorber, means including a reservoir vessel connecting said generator and said absorber for circulation of absorbing solution therethrough and therebetween, said reservoir being so connected in said solution circuit that a gas space is provided above the liquid level therein and solution inlet and outlet connections thereto are provided adjacent its bottom portion below the said liquid level, means providing restricted communication between said inert gas circuit and the upper gas space in said reservoir, and a body of liquid which is progressively vaporizable and condensable as the temperature of said reservoir varies floating on the surface of the liquid therein contained.

2,495,002. AIR CONDITIONING APPARATUS. Edward L. Hart, Abington, Pa., assignor to Philco Corp.



1. An air conditioner or the like, comprising: a generally rectangular housing; an evaporator element within said housing and so disposed as to extend angularly across one corner of the housing; a condenser element within said housing and so disposed as to extend angularly across an adjacent corner of the housing; each of said elements including a plurality of fins defining parallel passages through the element, air propelling means disposed within another corner portion of said housing and operable to direct a stream of cooling air in heat exchange relation with said condenser element; and second air propelling means disposed in the other corner portion of said housing and operable to direct a stream of air to be cooled in heat exchange relation with said evaporator element, both said evaporator and said condenser elements having such angular disposition with respect to the air stream flowing in heat exchange relation therewith that the air impinges against side portion of said fins and is redirected thereby and caused to flow through said parallel passages.

2,495,077. APPARATUS FOR SERVING ICE CREAM. Harry W. Protzeller, Fairmont, Minn., assignor of one-half to Arthur Wm. Nelson, Park Ridge, Ill. Application Aug. 10, 1944, Serial No. 548,921. 3 Claims. (Cl. 107-8.)



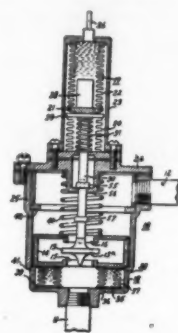
1. Ice cream serving apparatus embodying therein an upright casing having front and rear walls and side walls, means spaced inwardly from each front and rear wall and providing refrigeration in said casing, tubes disposed between said refrigerating means each to receive a bar of relatively solid ice cream for gravitational movement therein toward the bottom thereof, devices on said first mentioned means holding said tubes in lateral spaced relation, with hair circulating channels therebetween that open at the top into the top of the casing, mechanism each associated with a tube and mounted on the casing for a forward and rearward movement thereon, said mechanism in its movement in one direction operating to sever a portion of the bar at the bottom of the associated tube and to discharge it from said apparatus.

Week of January 24

2,495,226. AUTOMATICALLY REVERSIBLE REGULATING VALVE. Harry R. Crago, Schenectady, N. Y., assignor to General Electric Co.

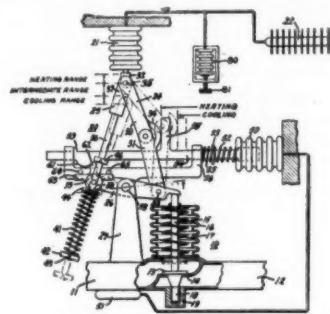
3. An automatic fluid flow regulating valve for effecting opposite changes in the rate of flow of the fluid in two ranges of

temperature of the fluid, said valve comprising a casing having an inlet and an outlet, a port member and a port closure member mounted in said casing, said



members being movable with respect to one another and cooperating to control the flow of fluid from said inlet to said outlet, one of said members comprising two spaced elements, means including a first thermomotive device responsive to the temperature of the fluid for shifting said members with respect to one another to afford cooperation of the other of said members with one of said elements in one of said ranges and with the other of said elements in the other of said ranges, and means including a second thermomotive device responsive to a temperature condition dependent upon the flow of the fluid for regulating the relative movement of said members in the same sense in both of said ranges to effect opposite changes in the rate of flow of the fluid.

2,495,227. CONDITION RESPONSIVE REVERSING VALVE MECHANISM. Walter O. Lum, Livingston, N. J., assignor to General Electric Co., a corporation of New York. Application Feb. 19,



signor to General Electric Co., a corporation of New York. Application Feb. 19,

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$5.00 per insertion. Limit 50 words. 10¢ per word over 50.

RATES for all other classifications \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

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CAREFULLY SELECTED group of trained men, graduates of reliable and well established trade school now available to fill positions in the radio or refrigeration field. Willing to travel anywhere. Why not fill that vacancy with an efficient and reliable man? Write EASTERN TECHNICAL SCHOOL, 888 Purchase Street, New Bedford, Mass.

PROJECT ENGINEER. Age 38. B.S. degree mechanical engineering. 15 years experience mechanical, air conditioning, and refrigeration products. Desire product design or air conditioning application work. Write BOX 3518, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICEMAN—young man desires position as serviceman in commercial refrigeration. Have one year's experience in domestic work and some commercial experience. Also graduate of trade school. Chance to learn commercial work more important than initial salary. Single; go anywhere, but prefer Midwest. Eligible for G. I. training. BOX 3520, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

AIR CONDITIONING and refrigeration district sales managers. Carrier Corporation requires services of district sales managers to fit into expansion program. Applicants must have proven record in the air conditioning and refrigeration field. Location: South and West. In reply state age, education, experience, preferred location and salary desired. Address Personnel Division, CARRIER CORPORATION, Syracuse 1, N. Y.

SALES MANAGER with proven record to handle parts of Iowa and surrounding states on our commercial manufacturing refrigeration fixtures, wholesaling and retailing and handling salesmen. We have covered this territory for 64 years. A fine proposition for wide awake man. C. L. PERCIVAL COMPANY, INC., Boone, Iowa.

RESEARCH ENGINEER. Well known manufacturer in Middle West has position for experimental and research engineer. Experience with low side heat transfer equipment necessary. Write giving full details first letter. Address BOX 3510, Air Conditioning & Refrigeration News.

FIELD SERVICE engineer is required in the Atlanta area, covering southeastern states, to fill vacancy created by an expansion program. Here is an opportunity for an aggressive refrigeration serviceman to elevate himself to a position for better opportunity in the future. Old established food store fixture manufacturer well entrenched in the industry, with highest credit rating. Write all details of your background, experience, and give references in first letter. Enclose

1947, Serial No. 729,606. 13 Claims. (Cl. 238-1.)

2. In combination, means including a reversibly movable flow regulating valve for controlling a first variable condition dependent upon another condition, automatic actuating means responsive to said first condition for moving said valve in accordance with variations in said first condition, said automatic means including alternative connections for actuating the said valve, said connections being arranged for effecting opposite movements of said valve with respect to said variations in separate ranges, second automatic actuating means for alternatively rendering said connections effective upon variation in said other condition from one range to another range, and means operated by said second automatic actuating means for opening said valve to provide a predetermined minimum flow only when said other condition is intermediate said ranges.

(To Be Continued)

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MISCELLANEOUS

NORGE SEALED units remanufactured and exchanged. Immediate delivery from stock, 1 year guarantee. Write for prices and shipping instructions. Complete Norge engineering service. 22 years experience. MODERN REFRIGERATION CO., INC., 12541 E. McNichols Road, Detroit 5, Michigan.

NAED Stresses Need for Specialty Selling --

(Concluded from Page 1)

room air conditioners, food waste units, and freezers, in addition to television.

"The addition of so many new products has placed such an additional burden on the existing sales forces of both distributors and retailers that the market for major appliances since the war has not received necessary attention."

In the resolution on local newspaper advertising rates, the division decided to notify the American Newspaper Publishers Association of its action. It also resolved to urge the ANPA's members "to discontinue such discriminatory practices and thereby enable electrical appliance distributors and dealers to increase their local newspaper advertising expenditures. . . ."

ADVERTISING SUGGESTION

The resolution on the cost of cooperative advertising stated, in part: "As wholesale distributors we deprecate the cost of organizing, administering, and directing the cooperative advertising effort for the benefit of both manufacturer and dealer as a substantial share of our cost of doing business. However, we do not believe that it is the function of the distributor to make direct contribution to consumer advertising."

During the convention, W. G. Peirce, Jr., president of Peirce-Phelps, Inc., Philadelphia, was elected president of the association. Peirce, who succeeds D. M. Salsbury, had been serving as vice president and chairman of the Appliance Div.

He was replaced in the latter position by Benjamin Gross, Gross Distributors, New York City. R. M. Johannesen, Johannesen Electric Co., Greensboro, N. C., was re-elected vice president and chairman of the Apparatus and Supply Div.

I. W. Danforth, Danforth Co., Pittsburgh, was elected to the executive committee and Ralph Brown, General Electric Supply Corp., Bridgeport, Conn., was re-elected to that committee.

The following members were newly elected to the board of governors:

A. D. Stokes, Stokes Electric Co., Knoxville, Tenn.; C. A. D'Elia, D'Elia Electric Co., Bridgeport, Conn.; Harry R. Tracy, Tracy & Co., Inc., Providence, R. I.; Raymond Rosen, Rosen & Co., Inc., Philadelphia; Fred

H. Dendy, Electrical Wholesalers, Atlanta; J. H. Bragg, Florida Electric Supply Co., Tampa, Fla.; J. I. Bogden, B. & B. Electric Co., Cincinnati; J. T. Morgan, Charleston Electrical Supply Co., Charleston, W. Va.; L. E. Barrett, Barrett Electrical Supply Co., St. Louis; and J. R. Thompson, Warren Electric Co., Houston, Tex.

Opening the Appliance Div. convention, Peirce emphasized the importance of proper profit margins for distributors.

"During the past few years," he said, "distributor margins have radically shrunk while their payrolls and fixed charges have rapidly risen. Only tremendously increased volume has saved our bacon. The danger line is being reached where a modest decline in business, a sudden inventory loss could throw many successful distributors into a loss operation."

One of the principal speakers at the division's meetings was George P. F. Smith, president of Norge, who said a better job of distribution can be done through independent distributors than through factory branches.

ADVANTAGES OF INDEPENDENTS

"Any independent distributor can run rings around the branches if he fully capitalizes on the advantages that are his," Smith declared.

He said the number one advantage of independent distribution is in the additional resources, including capital, it places at the disposal of the manufacturer. He listed other important assets of the independent distributor over branch distribution as marketing knowledge and a better balanced operation.

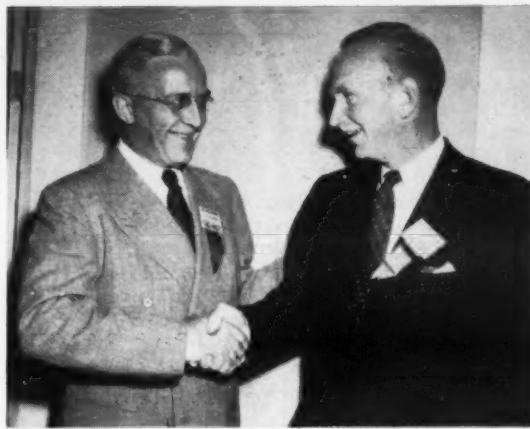
Smith concluded: "The independent distributor can and must perform a worthwhile service of benefit to the consumers, the retailers, and the factory. As long as he does this, his future is secure."

The Appliance Div. also heard talks by Joseph B. Elliott, vice president in charge of RCA Victor Consumer Products, Radio Corp. of America, and W. E. O'Brien, general sales manager of Toastmaster Products Div., McGraw Electric Co.

Three panel discussions were staged during the Appliance Div. convention. In one of them, the distributors considered the need for promoting acceptance of new prod-

Peirce Heads Electrical Distributors Group

W. G. Peirce, Jr., at right, newly elected president of the National Association of Electrical Distributors and president of Peirce-Phelps, Inc., Philadelphia, receives the congratulations of his predecessor, D. M. Salsbury, president of Westinghouse Electric Supply Co., New York City.



ucts, including room air conditioners and home freezers, and debated the merits of specialized sales forces.

A highlight of this discussion was presentation of a report of the special committee for market development of new appliances. The report was given by R. C. Litchfield, committee chairman.

Litchfield presented statistics showing the mounting sales of five new items since 1941. It was estimated that in 1950, the industry would sell 175,000 room air conditioners, 650,000 home freezers, 225,000 electric dishwashers, 200,000 food waste units, and 265,000 electric clothes driers.

Litchfield's report stressed that although the market opportunities for these products are great, intensive promotion and specialty selling are required to fully capitalize on them. It urged the whole industry to go all out in educating the public on the use value of these appliances.

ACTION IS NEEDED

In the ensuing discussion from the floor, distributors agreed that such action is needed. One suggested that utilities should de-emphasize their "packaged and bargain campaigns" and put their major effort on promoting the new products.

The discussion then turned to the subject of specialized sales organizations. A show of hands indicated that about half of the distributors had separate sales forces for white goods and television.

Other distributors related how

they had worked out a compromise arrangement successfully. The point was made by others that separate forces work out all right in metropolitan areas but may not be economical in fringe areas because of the high cost.

In another panel discussion, the distributors argued the topic of price guarantees. This discussion was led by Harry Alter, pinch-hitting for Benjamin Gross, chairman of the radio, television, and tubes committee, who was in England on a long-delayed vacation.

HIGH LEVEL SALES

During the general convention session, talks were given by D. M. Salsbury, retiring president; O. Fred Rost, editor of *Electrical Wholesaling*; Kendall B. DeBevoise, association counsel; and Arthur H. (Red) Motley, president of Parade Publication, Inc.

Noting that electrical distribution sales in the second quarter are better than in the first, Salsbury said there are several indications that business for the year will be completed at a high level.

"I think we can reasonably expect this result because of these basic facts," he stated. "Employment and income are continuing at a high level. The housing boom is still growing, and construction work generally is continuing at a high rate. Farm income is good. Industry is spending more than it planned earlier this year for new plants and equipment."

And finally, perhaps because of these factors, consumer spending for appliances continues to increase."

In reviewing the association's activities, Salsbury reported that the number of members is greater than it was at the Cincinnati convention last year.

"Our total of all classes of membership well exceeds 900 houses, located in just about every marketing center of the country," he said.

Rost traced the growth of electrical wholesaling industry over the years and then attempted to forecast what's ahead in the next 50 years. He predicted steadily-growing, ever-vaster markets for the industry's products, with the industry getting an increasingly larger share of the consumer dollar.

By the year 2000, Rost said, air conditioning of retail stores, offices, and schools will be the usual thing.

DeBevoise discussed the Robinson-Patman Act and its application to electrical distributors.

NEED FOR SALESMEN

Motley urged the distributors to sell retailers on building up a reserve pool of salesmen against the time when television stops drawing buyers into the stores. If dealers don't do this, he cautioned, they'll be "riding for a fall."

Earlier in the week, the association's Apparatus and Supply Division heard Charles E. Wilson, president of General Electric Co., defend bigness in business.

"I do not believe there is a shred of actual evidence to indicate that the bigness which has been the glory of American business has been an evil force either economically or socially," he declared.

Also presented to the division was a two-part study of distribution by R. Stafford Edwards, president of Edwards & Co., Inc., and N. J. MacDonald, vice president of The Thomas & Betts Co., Inc.

"If it is true—as both consumers and manufacturers are claiming—that the costs of distribution are becoming too high, why should it be?" MacDonald asked.

"I think it's because the wrong people—manufacturers themselves, non-service organizations, the users—are trying to do the distribution job which the wholesale distributor is more efficiently organized to do."

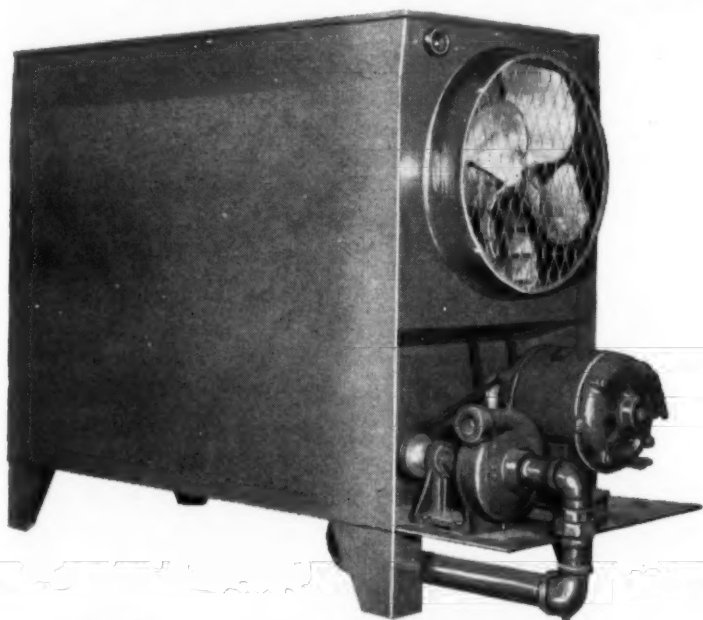
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Other manufacturers have copied our design as far as possible. We are happy that they cannot copy our performance nor match the life of our equipment. Appearance may be deceptive, but dependable, trouble-free performance must be proven. Through our many reputable representatives in major cities throughout the country, and the many satisfied users of towers that bear the Good-Fellow name, we have proven that Goodfellow towers are dependable. For efficient water cooling needs, rely on Goodfellow towers to perform as specified. Accept no substitute.

From 2 to 50 tons, all steel cased, induced draft
For use with any air conditioning or refrigerating unit
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COLD AIR RE-CIRCULATION MAKES EXTRA PROFITS FOR YOUR CUSTOMERS

Sherer's exclusive Atomized Air-Directional Flow system RE-CIRCULATES COLD AIR instead of constantly refrigerating warm air. Running time is reduced as much as 15% — your customers can save up to \$90.00 a year in running time alone on a single 10 Ft. Case! Moreover, the 3/4 hp condensing unit in a Sherer Self Serve Open Meat Case does the work usually performed by 1 to 2 hp units. So besides a saving in initial cost, Sherer cases cut power requirements 50% or more. The Open Display Cases shown here refrigerate merchandise, not the store; there is no spillage waste. Add all these Sherer savings to the increased sales volume Sherer cases bring the retailer (reported at high as 300%) and it's easy to see why you have the edge on competition.

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Meat Display Cases



Refrigerators



Self-Serve Cases



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New York City Relaxes Water Restrictions For Some Users, But Not Air Conditioning

NEW YORK CITY—Water reservoirs serving New York City were 94% full last week, bringing them up to the level they were a year ago, Stephen J. Carney, city commissioner of water supply, gas, and electricity, has announced.

New Yorkers were warned, however, that a prolonged dry spell or a continued rise in water consumption could put the city on short rations again next winter.

In view of the improved situation, the city has launched a 30-day trial on a partial relaxation of some of the restrictions that have been imposed on water use. The relaxation does not apply to air conditioning equipment, however.

The relaxation will permit the use of swimming pools and the watering of lawns and gardens for three hours in the evening. Public parks, gardens, and housing developments will be permitted to water their grounds twice a week. The ban on washing the outside of buildings is also lifted.

Dry Days—one day per week when consumers were asked to use as little water as possible—are being discontinued until July 13.

Despite these relaxations, a bill is in the city legislative mill to raise the fine against property owners who neglect to repair leaky pipes or faucets from \$5 to \$50.

The bill also provides for the installation of water meters on the premises of persons who repeatedly waste water. It would apply \$50 fines and/or imprisonment up to 30 days on tenants who wilfully or maliciously waste water.

Because the city now requires that air conditioning systems use recirculating water, the cost of the new \$10,000,000 central office building for the city transit system has been increased by \$84,100.

Original intention had been to discharge used water into the sewer. But now ground water and only a small amount of city water will be used, it was said.

Texas Distributors Named By G-E for Dallas Area

DALLAS—Jack B. Lowe, president of Texas Distributors, Inc., has recently announced his company's appointment as authorized distributor in the area for General Electric air conditioning and heating equipment which includes air conditioning for residential, commercial and industrial installation, gas and oil fired furnaces and boilers, and General Electric water coolers.

Texas Distributors was incorporated in 1946; executive officers are Jack Lowe, president; Fred W. Addison, Jr., vice president in charge of operation; David W. Harrington, vice president in charge of sales; and Mrs. Julia L. Greer, secretary-treasurer.

Directors include the four executive officers as well as Mrs. Florence Lowe, Ed Rose, E. Taylor Arm-

strong, and Walter K. Gowdey.

A service department was the first department to be set-up in the four-year-old company. Other departments include an engineering department headed by a professional engineer, two graduate engineers, and two engineering trainees.

A construction department handles all company installations and has a staff of five sales engineers.

A water cooler rental department, is provided.

In the interest of its employees, Texas Distributors, Inc. provides a Profit-Sharing Plan under which 25% of the company profits before taxes is distributed to the non-executive employees each year.

A retirement plan pays an amount equal to 5% of the employees wages toward a retirement fund at no cost to the employees.

Stock-Purchase is open to all employees to enable them to participate in the company by becoming a stockholder. Fifty per cent of all employees own stock in the company.

Freez-Pak Names National Sales Representative

CHICAGO—The firm of Merritt and Andree has been named national sales representative for Freez-Pak, midge refrigerator produced by Ionia Mfg. Co., Ionia, Mich., according to Don R. Mitchell, president of the refrigerator manufacturing company.

Mitchell noted that during the past five months, the Freez-Pak has been market tested in several major markets with "exceptionally good results."

Its acceptance by the department and appliance specialty stores has paved the way toward appointment of a national sales organization that will complete representation nationwide and support it with trade and consumer advertising and promotion efforts, Mitchell further indicated.

I. N. Merritt and Roy Andree, principals of the sales firm, have long been identified with the appliance industry. They have served in top executive sales capacities with Conlon-Moore Corp., Thor, Meadows, and other home laundry manufacturers.

Dealer Gets Decision on 'As Soon as Possible'

BUFFALO—A legal definition of the words "as soon as possible" was provided by City Judge Michael E. Zimmer in a \$232.50 decision in favor of an electric appliance dealer in a breach of contract suit.

The words "mean a reasonable time dependent upon the intention of the parties and the facts and circumstances surrounding the particular case," his decision declared.

The suit was brought by William A. Moser, operator of the Moser Electrical Appliance Co., 2288 Genesee St. He charged that the Jerge Sales Co., Inc., 1647 Genesee St., auto dealer, delayed delivery until Jan. 10 of a new panel truck which he purchased from the company on Nov. 25, 1949.

Although the contract provided for delivery "as soon as possible," Moser charged that Jerge Sales had agreed to make delivery within two or three weeks.

Moser purchased the truck in order to handle deliveries of appliances during the busy holiday season, he said. He asserted that the defendant was aware of this.

When delivery was attempted Jan. 10, Moser refused to accept the truck. He then filed suit for recovery of a \$200 down payment, plus interest and court costs. Judge Zimmer added in his decision:

"In the case at bar, the defendant knew that the plaintiff needed the truck for the holidays. It failed to deliver the car within the two or three weeks agreed upon and therefore breached the contract."

\$3,500 Phone Call Maps Crosley Plans for Fall

LOS ANGELES—A "marathon" telephone call that took four hours to complete carried the fall merchandising plans of the Crosley Div., Avco Mfg. Corp., to 2,000 distributors and sales executives in 84 cities across the country.

The call was made from the Biltmore hotel here by W. A. Blees, general sales manager of the Crosley Div., on Saturday, June 17. It cost \$3,564.

Blees did not reveal details of the fall program, but indicated that competition and the public was in for another "shock" treatment such as it got last fall from the company's \$2,000,000 give-away show.

"We are going to stage another startling give-away the like of which has never been done before," Blees declared.

"Last year's \$2,000,000 give-away did more for our company and Crosley dealers than any promotion I have ever seen in my 30 years of business. Business has shown an increase more than double last year," he added.

Blees asserted that Crosley was now producing from 3,800 to 4,000 refrigerators per day. The factory has only a four-day supply on hand and distributors have only about a two-week supply, he stated.

New Buffalo Service Firm

BUFFALO—A business name has been filed in the Erie County clerk's office for the Dell Refrigeration Service, 655 Broadway, Buffalo, by Calvin Nelson.

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SELF-CONTAINED air conditioning unit

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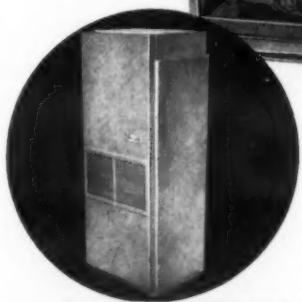
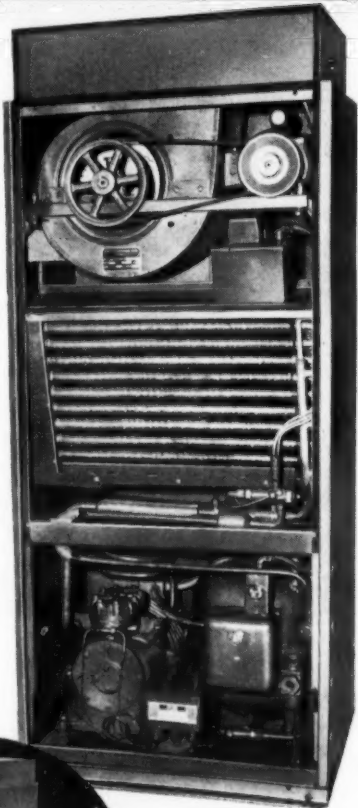
Wonderfully compact. Only 66" high—30" wide—24" deep. Retains all the outstanding features of the larger CLIME-MATIC units. Ideally suited for every type of smaller installation. Quiet, dependable, easy to service.

Desirable territories available to distributors' and manufacturers' agents. Write today for full information.

7 CLIME-MATIC Units in Capacities from 2 to 15 Tons.

2 TONS	2½ TONS	3 TONS	5 TONS	7½ TONS	10 TONS	15 TONS
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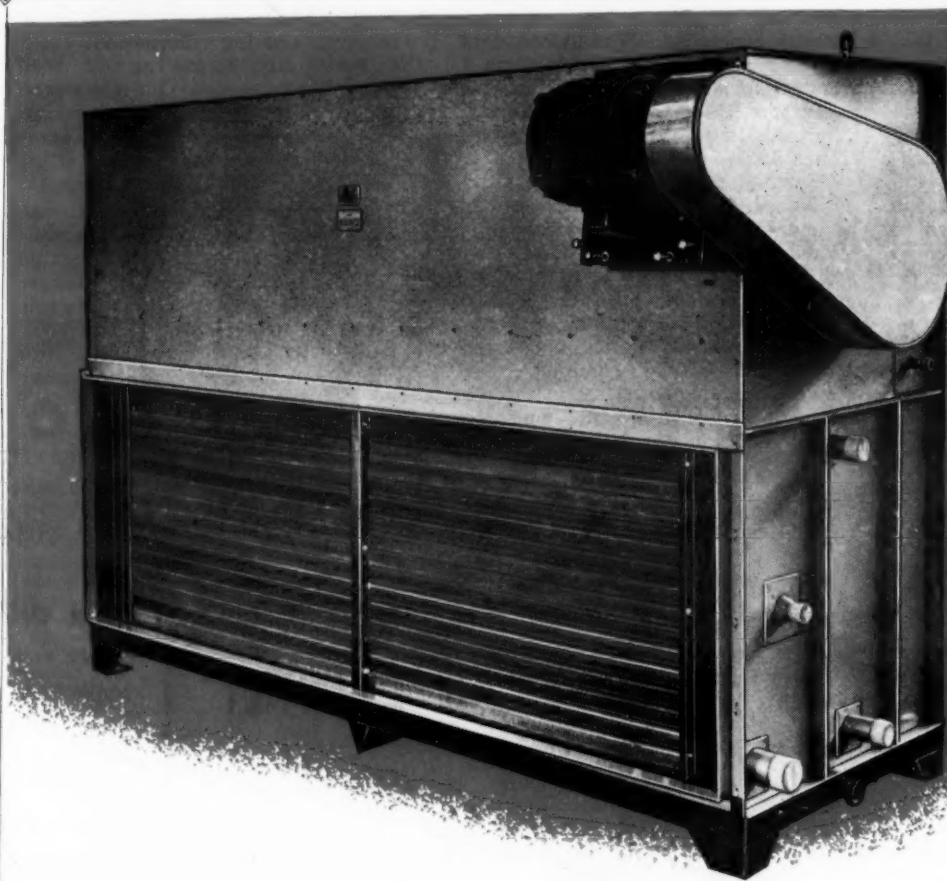


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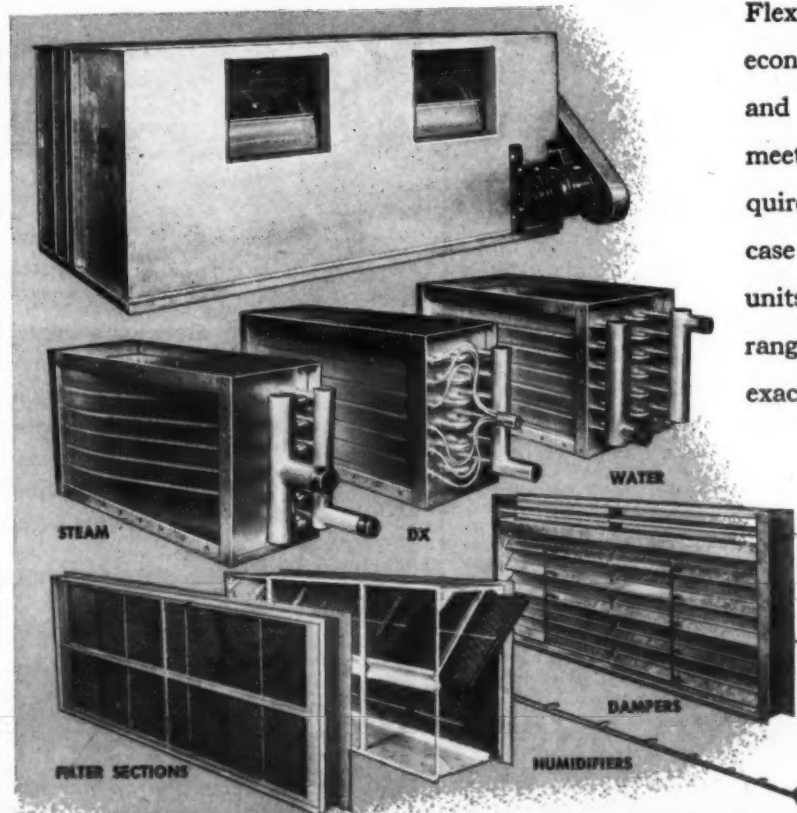
Cooling Is In Fashion

CLAYTON, Mo.—Garland's new \$1,000,000 women's specialty fashion store, to be built soon at Forsyth Blvd. and Parkside Dr., will be air conditioned throughout, according to Charles G. Andrews, company president.

Andrews said the structure will be a two-story building containing 35,000 sq. ft. of floor space.



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